2017-2018
Citrus County Fair
Sheep
Skill-a-Thon

INTRODUCTION

This manual has been developed by the Animal Sciences Department Faculty at the University of Florida as a study guide for the Sheep Skill-a-thon. The topic for this year's Skill-a-thon is Products and Marketing.

The Citrus County Fair recognizes that agricultural education instructors, parents, 4H agents and leaders provide the traditional and logical instructional link between youth, their livestock projects and current trends in the animal agriculture industry. **PLEASE NOTE:** This manual is provided as a ***study guide*** for the Skill-a-thon competition and should be used as an additional aid to ongoing educational programs.

Sections are labeled **Junior, Intermediate & Senior, Intermediate & Senior, or Senior** to help exhibitors and educators identify which materials are required for each age level.

The knowledge and skills vary by age group and may include:

Juniors (age 8-10 as of September 1, 2017)
By Products,
Wholesale cuts & Primal

Intermediates (age 11-13 as of September 1, 2017)
all of the above plus...
Retail Cuts
Cookery

Seniors (age 14 and over as of September 1, 2017)
all of the above plus....
Sheep/Lamb Evaluation
Wool Grades
Quality Assurance
Skeletal Anatomy

GOOD LUCK!

Products and Marketing

Youth livestock projects focus on the selection, raising, showing and often selling of animals. By virtue of their participation in livestock projects, youth become part of an industry that provides food and fiber for the world. Steps involved in the movement of animals and animal products from producer to consumer are known as *processing and marketing*. Tremendous changes have occurred in recent years in the ways animal products are harvested and marketed but the fundamentals remain the same. Price is dependent on *supply and demand*. We can impact supply through increased breeding but demand is more difficult to affect. In order to maintain a stable market for animal products, consumers must have confidence in the ***wholesomeness and quality*** of what they are buying. That means the products must be safe, nutritious and tasty. The American Lamb Check-off is a promotion program begun in 2002 to increase market share, improve prices and increase export markets. Read about it at:
http://www.lambcheckoff.com/

Marketing may be as simple as receiving a set price per pound or may involve a pricing system known as 'Value Based Marketing'. ***Value based pricing systems*** account for quality and apply deductions or bonuses as products deviate from an accepted *baseline*. This should ultimately improve the quality of products offered to consumers, therefore boosting consumer confidence. Animal products may be marketed at auctions, by direct sales, contracts or electronically with the use of computers and satellite technology. Regardless of the marketing method, the seller is trying to receive the highest *price* while the buyer is trying to receive the greatest *value* (high quality and reasonable price). Read about lamb marketing at: http://www.sheep101.info/201/lambmarketing.html

Sheep Products and Marketing

Products of the sheep industry are those derived from the carcass (lamb, mutton, edible and inedible by-products) and wool. The majority (70%) of the sheep produced in the United States are raised in range conditions and the states with the most lambs on feed are Colorado, California, Texas and Wyoming. The sheep industry in the eastern U.S. is mostly smaller, farm flock operations. The industry can be divided into commercial and purebred production. Though there are far more commercial sheep than purebreds, it is purebred breeders that set the trends for the industry. Selection priorities have shifted toward larger frame size. There are a number of barriers to having a profitable sheep business: seasonal demand for lamb does not match breeding and lambing season, low per capita consumption, and low wool prices, use of artificial fibers, predators, high labor requirement, inadequate slaughter and marketing opportunities. The sheep industry in the United States has declined to the point that it is only a specialty industry. Thought there are more than 82,000 sheep producers in the United States, income from sheep and lamb production accounts for only two tenths of 1% of animal agriculture's share of cash receipts. The American Sheep Industry Association represents the interests all sheep producers and has 45 state associations. http://www.sheepusa.org/Home Though sheep numbers in the U.S. are declining, world-wide they are the second most numerous agricultural animal excluding poultry, numbering approximately 1.1 billion globally.

The American Lamb Board is an industry-funded research and promotions commodity board that represents all sectors of the American lamb industry. The 13-member Board, appointed by the Secretary of Agriculture, is focused on increasing demand by promoting the freshness, flavor, nutritional benefits, and culinary versatility of American Lamb. The work of the American Lamb Board is overseen by the U.S. Department of Agriculture and the board's programs are supported and implemented by the staff in Denver, Colorado The American Lamb Board is working to build demand for American Lamb through a variety of marketing programs and activities including consumer events, media outreach, culinary education, foodservice and retail promotions, online advertising, social marketing, and more. http://www.americanlamb.com/

Animal By-Products

Animal by-products are anything of economic value other than the carcass that comes from animals during harvest and processing. They are classified as edible or inedible for humans. There may be some disagreement about what is edible but we can all agree that there are many uses for what is left after the carcass is rolled into the cooler. In developing countries by-products may become jewelry, religious implements, tools, fuel, construction material, fly swatters, or musical instruments. In developed countries, advances in technology have created many products from non-animal sources (synthetics) which compete with animal by-products, thus reducing their value. Still, by-products represent multibillion dollar industries in the United States and other developed countries. An added benefit of changing inedible parts of carcasses into useful products is that the decaying materials don't pile up and cause environmental problems. ***Rendering*** is the term for reducing or melting down animal tissues by heat and the rendering industry refers to itself as the "original recyclers". The creativity of processors in finding uses for by-products leads to the saying "the packer uses everything but the bleat". Read some more about products we get from sheep at: http://www.sheep101.info/sheepproducts.html

Edible by-products

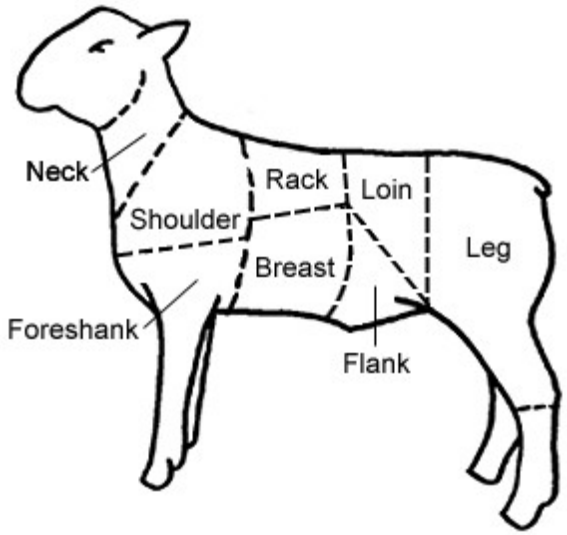
Raw Material	Principal Use
Brains, Kidneys, Heart, Liver, Testicles Spleen, Sweetbreads, Tongue	Variety Meats
Cheek and head trimmings	Sausage ingredient
Blood	Sausage component
Fats	Shortening (candies, chewing gum)
Intestines	Sausage casings
Esophagus	Sausage ingredient
Bones	Gelatin for confectioneries (marshmallows), ice cream and jellied food products

Inedible by-products

Raw Material	Processed by-product	Principal Use
Hides	Leather	various leather goods
	Glue	paper boxes, sandpaper, plywood, sizing
	Hair	Felts, plaster binder, upholstery, brushes, insulation
Pelts	Wool	Textiles
	Skin	Leather goods
	Lanolin	Ointments
Fats	Inedible tallow	Industrial oils, lubricants, soap, glycerin Insecticides, weed killers, rubber, cosmetics, antifreeze, nitroglycerine, plastics, cellophane, floor wax, waterproofing agents, cement, crayons, chalk, matches, putty, linoleum
	Tankage	Livestock and poultry feeds
Bones	Dry bone	Glue, hardening steel, refining sugar, buttons, bone china
	Bone meal	Animal feed, fertilizer, porcelain enamel, water filters
Feet	Neatsfoot stock	Fine lubricants
	Neatsfoot oil	Leather preparations
Glands	Pharmaceuticals	Medicines
Lungs		Pet foods
Blood	Blood meal	Livestock and fish feeds
	Blood albumen	Leather preparations, textile sizing
Viscera and meat scraps	Meat meal	Livestock, pet and poultry feeds

Wholesale Cuts of Lamb

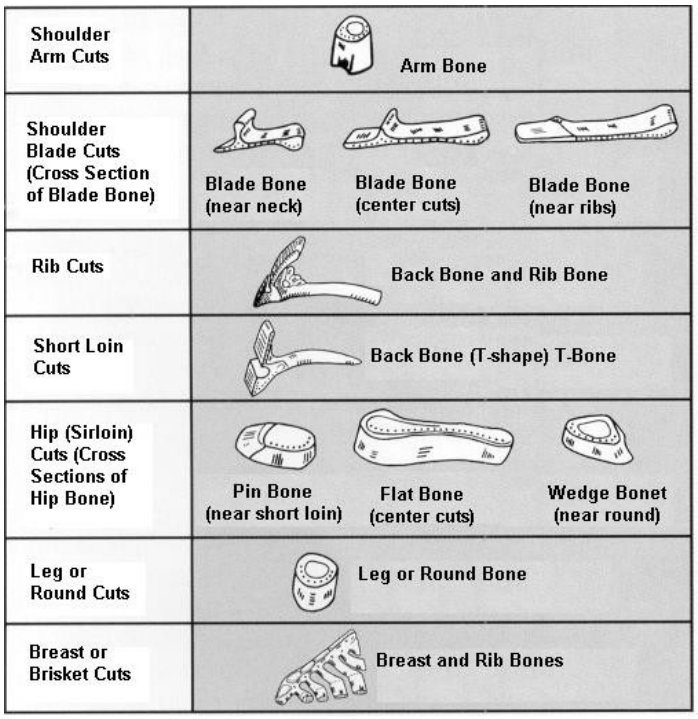
Fabrication of carcasses is the cutting of the carcass into wholesale and retail cuts for distribution to various markets. The size of the carcass and the preferences of the customer will determine how it is fabricated. For lamb carcasses, wholesale cuts come from standard cutting methods developed to: *a) Separate fat from lean portions b) Separate tough from tender sections c) Separate thick from thin sections d) Separate valuable from less valuable cuts e) Separate retail cuts by cutting across the grain.*



Primal Cuts

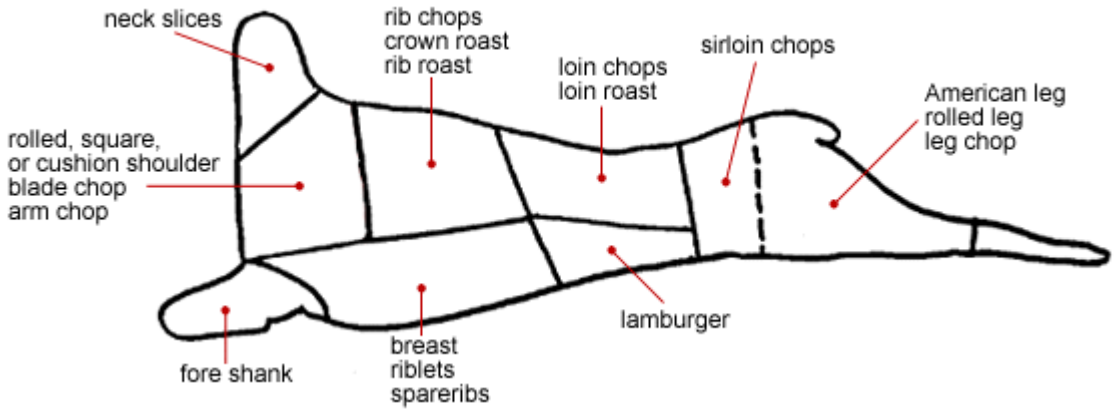
Of the wholesale cuts, those that are lean, tender, thick, and valuable and that contain a large proportion of their muscles running in the same direction are called *primal* cuts. The ***primal lamb cuts are shoulder, rack, loin and leg***.

(Copied with permission from NCBA, "The Guide to Identifying Meat Cuts")



Retail Cuts of Lamb

At the retail markets, boxed cuts are used to generate retail cuts for the meat case. Different stores have their own styles for each cut in an attempt to meet their customers' needs. Retail specifications include size or thickness of cut, external fat trim, boneless or bone-in, and number of cuts per package. Items generated other than steaks and roasts may include stir fry, kabob, cubing material, and grinding material for processed or value-added products. Labels on meat must be specific for species, wholesale cut and retail cut names (example: Lamb Shoulder Blade Chop) Retail cuts of lamb can be reviewed at:
http://www.tvsp.org/retail-cuts.html



American Leg **Arm Chop** **Blade Chop** **Center Loin Chop**

Center Rib Chop **Frenched Leg** **Neck Slice**

Visit the grocery store and practice visually identifying cuts of lamb or go to:
http://agrilifecdn.tamu.edu/animalscience/files/2012/04/RetailCutidTips.pdf

http://animal.ifas.ufl.edu/meat_extension/youth/meat_resources/docs/identifying_retail_cuts.pdf

Int. & Sr.

Meat Cookery

Methods of cooking meat include dry heat or moist heat. Dry heat cookery methods improve flavor of meat through crust formation and caramelization but increase chewiness and decrease tenderness because of protein hardening. Moist heat cookery methods increase the tenderness of meat cuts that are comprised of muscles containing large amounts of connective tissue. Cookery under moist conditions for long periods at relatively low temperatures generates steam that then converts the collagen in connective tissue into gelatin. Methods should be selected based on initial tenderness of the cut, desired quality characteristics of the resulting product, available cooking facilities/equipment, and the amount of time available for preparation.

Dry Heat

Dry Heat methods of cooking are suitable for tender cuts of meat or less tender cuts which have been marinated. Use cuts low in collagen and elastin.

Roasting - This method of cooking is recommended for larger cuts of meat. Meat is seasoned and placed in an open roasting pan with a cooking thermometer placed in the center to determine degree of doneness.

Broiling - This method is most suitable for tender, usually thin cuts of meat. Less tender cuts may also be broiled when marinated. Meat is directly exposed to the source of heat from above or from both sides at the same time. It involves high heat and produces a distinct caramelized flavor.

Grilling - This method is actually a method of broiling. Meat can be grilled on a grid or rack over coals, heated ceramic briquettes or an open fire.

Pan-Broiling - This method is faster and more convenient than oven broiling for cooking thinner steaks or chops. It involves conduction of heat by direct contact of the meat with hot metal. Fat drippings are poured off as they accumulate.

Pan-Frying - This method differs from pan-broiling in that a small amount of fat is added first, or allowed to accumulate during cooking. Pan-frying is for ground meat, small or thin cuts of meat.

Stir-Frying - This method is similar to pan-frying except that the food is stirred almost continuously. Cooking is done with high heat, using small or thin pieces of meat.

Deep-Fat Frying - This method is cooking meat immersed in fat. This method is only used with very tender meat.

Microwave Cookery - High frequency electrical energy causes molecules inside the product to vibrate creating friction and heat without heating the surrounding air. The rapid speed of microwave cooking makes it ideal for frozen cuts in institutions and restaurants. Consumers complain that microwaved meat is inferior in flavor.

Moist Heat

Moist Heat methods of cooking are suitable for less tender cuts of meat. Moist heat cooking helps to reduce surface drying in those cuts requiring prolonged cooking times. With moist heat cookery, meat may lose some water-soluble nutrients into the cooking liquid. However, if the cooking liquids are consumed, as in stews or soups, nutrients are transferred and not totally lost. Meat should never be boiled because high temperatures toughen protein.

Braising - In some regions of the country the term "fricassee" is used interchangeably with braising. The surface of the meat is seasoned, covered with flour and browned. Afterward the meat is placed in a covered pan with a small amount of liquid and cooked at low temperatures to soften the connective tissue and yield a tenderer product.

Stewing – Small pieces of lean meat can be browned on the surface then covered with liquid and gently simmered in a covered pan until tender. Care should be taken not to let the temperature of the liquid exceed 195^{O}F, because boiling toughens meat protein.

Simmering - Involves cooking in water at low temperatures (180^{O}F) like stewing except more water is used and the meat is usually not browned first.

Pressure Cooking – Cooking under pressure produces steam which aids in softening connective tissue. Pieces of meat may be browned then cooked with a small amount of water in a special vented pressure cooker.

Read about cooking various cuts of lamb by printing out the fact sheet:
http://www.askthemeatman.com/pdf%20files/lambprocessing.pdf

Meat Facts ***

100g Roasted	Calories (g)	Fat (g)	Sat'd Fatty Acids (g)	Protein (g)	Iron (mg)
Beef	216	9.9	3.79	29.58	2.9
Chicken	190	7.41	2.04	28.93	1.21
Goat	108	2.58	.79	29	3.3
Lamb	206	9.52	3.4	28.22	2.05
Pork	212	9.66	3.41	29.27	1.1
Rabbit (stewed)	206	8.41	2.51	30.38	2.37

Marketing Wool

The National Wool Act of 1954 provided incentive payments to producers to help them compete with foreign imports. In 1993 the incentive program was repealed with the last payments ending in 1995. This, combined with falling wool prices and competition with synthetic fiber, has caused most producers to focus on meat production. Though wool is now considered more of a by-product to sheep producers, it is still a potential source of income. Wool may be marketed by local buyers, wool pools, cooperatives, warehouse operators, or direct sales to wool mills. Before marketing, wool is graded or sorted based on the **yield, color and staple length**. Read about wool marketing at: http://www.sheep101.info/201/woolmarketing.html

A division of the *American Sheep Industry Association*, the *American Wool Council* works to improve the American wool industry and to promote the use of American wool in the U.S. and internationally. The 14-member council oversees wool promotion activities made possible by the Wool Trust Fund. Primary program areas include quality improvement, new technology, market accessibility, market information, wool production and quality assurance.

Wool Terms

Bellies - short and less desirable wool from the belly of the sheep.

Britch or Breech Wool - wool from the hindquarters of the sheep, usually the coarsest on the body, often approaching hair in characteristics.

Crimp - the natural curl in the wool fiber, gives wool its natural resilience and elasticity.

Fleece - the wool from a single sheep in the shorn grease state.

Grease Wool - wool as shorn from sheep, not washed or scoured (raw wool).

Handle or Hand - a term referring to the actual feel of wool.

Hoggett Wool - also called virgin wool, first fleece shorn from a sheep when about one-year-old.

Keratin - a complicated chemical protein substance, major constituent of a wool fiber.

Lamb's Wool - wool taken from a lamb not over seven months old.

Luster - determined by the amount of light reflected by the fiber.

Pelt - the skin of the sheep with wool still on the skin.

Scouring - actual washing of dirt, grease and foreign matter from grease wool.

Skirting - a practice of removing from the edges of the whole fleece, at shearing time, all stained and inferior parts.

Staple - the length of a lock of shorn wool. In the trade "staple" refers to wool that averages 2.5 inches or more in length.

Suint - salts of perspiration present in the raw wool fleece.

Woolen Yarn - yarn spun from wool fibers which are short.

Worsted Yarn - yarn spun from wool fibers which are long.

Yield - amount of clean wool derived from grease wool in the scouring process.

Yolk - natural grease and suint in sheep's wool, when purified is known as lanolin.

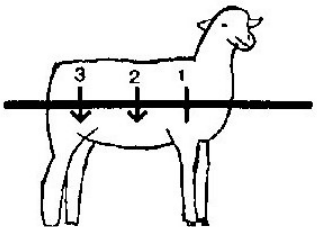
Wool Pricing

Clean price is based primarily on **fiber diameter and fiber length** which determine the end use of the raw fiber. Uniformity, fiber strength, color, crimp, softness and contaminants will affect price as well, but to a lesser degree.

Grease price is how most all fleeces are sold as this is how the wool leaves the farm. It is determined by measuring or estimating clean price and combining that with a value for yield and subtracting whatever handling fee is assessed. Grease Price = (Clean Price X Yield) – Handling

Evaluating Wool on the Live Animal

Lamb show participants shear their lambs but rarely market the wool. However, understanding how to evaluate wool quality, particularly in dual purpose breeds is relevant if you are purchasing replacement females or evaluating fleeces in your own breeding program. The drawing below illustrates the three locations in which the fleece should be examined.



With both hands, make a wide split in the wool to look at the fleece, working from Point 1 to Point 3. Estimate the following criteria: *fiber diameter or grade; uniformity of fiber diameter; staple length; character; yield and density.*

Fiber Diameter or Grade - compare the animal you're evaluating with the grade of wool that its breed should be producing. The average of the three points should correspond with the range of diameters or grades representative of the breed.

Uniformity of Fiber Diameter Both breeds and individuals within a breed will vary in fiber diameter uniformity. Breeds such as the Merino and Rambouillet, for example, should be uniform from front to rear. On the other hand, Columbias and Targhees are not quite as uniform from front to rear. The finest fibers are found on the shoulder and the coarsest fibers are located on the britch. One way to judge the uniformity of a fleece is to closely examine the number of crimps per inch. For example, if the staple on the shoulder has 11 crimps per inch and the britch has only 5 crimps per inch, there is a high probability that the fleece is not very uniform.

Staple Length- Staple length and uniformity of length are major value parameters. Each grade of wool has a minimum length to be classified as Staple, French combing or Clothing Wool.

Character - Character refers in general to crimp, color, handle and lock formation. Well crimped wools are usually stronger. Wools lacking in crimp have a tendency to break during processing. Bright wools are more valuable and take up dyes more uniformly than discolored wools.

Yield -

Yield is the amount of clean wool that is obtained from grease wool after scouring and is expressed as a percentage. If all animals being evaluated have been run together since their last shearing the depth of dirt penetration and amount of yolk are a good indicator of yield.

Density

Density refers to the closeness or compactness of the fibers in a fleece. The more fibers per square inch, the denser the fleece. There are two ways to check for density on the live animal:

1) When you part the fleece the amount of skin exposed is an indicator of the fleece density or, in other words, the less skin you see, the denser the fleece.

2) The density can be evaluated by grabbing a handful of wool and squeezing it. By doing this at point 1, 2 and 3 as seen in Figure 1B, you'll be able to get a feeling for how dense the fleece is when compared to other animals' fleeces. Wool having a shorter staple length will feel denser, therefore you should consider this when comparing animals with different staple lengths.

Other factors you should consider in evaluating fleeces on the animal are belly wool and kemp.

Belly Wool
Belly wool is wool that grows on the belly and is often uneven, tender, and shorter than wool from other pans of the body. Belly wool should be limited to the belly region. If belly wool is seen on the sides of the animal, it is a serious fault.

Kemp
Kemp is an opaque fiber which lacks strength, elasticity and crimp. The fiber is medullated and considerably coarser than other fibers in the same staple. Kemp fibers do not readily absorb dyes, therefore, wools containing kemp are limited to their end use. If a fleece contains kemp it is most prevalent in the britch wool.

http://www.woolgrowers.org/education/wool_pdf/W ool%20and%20Fiber/EVALWOOL.pdf

Grading Wool

Diameter of individual wool fibers determines the grade of wools. In the United States, grades of wool are designated by the American Blood System, the Spinning Count or micron diameter.

The Blood system was originally derived from the fine wool Merino sheep. Their wool was called fine. If a sheep was half Merino breeding, their wool was called 1/2 Blood. Today this system no longer refers to breeding background, but is used to describe typical fiber diameter.

The Spinning Count (Bradford) system is a more technical classification of wool in terms of fiber diameter. This count refers to the number of "hanks" of yarn, each 560 yards long, which can be spun from 1 pound of clean wool. For example, a 64s wool would yield 35,840 (560 x 64) yards or 107,520 feet (20.4 miles) of yarn.

The micron system is a more technical and more accurate measurement of the average diameter of wool fiber using a micrometer. The micron (1/25,400 of an inch) is used as the actual average diameter measurement.

Wool Classifications

American Grade	Spinning Count Grade	Micron Diameter(s)
Fine	Finer than 80s - 64s	Under 17.70 – 22.04
1/2	62s - 60s	22.05 - 24.94
3/8	58s - 56s	24.95 - 27.84
1/4	54s - 50s	27.85 - 30.99
Low 1/4	48s - 46s	31.00 - 34.39
Common	44s - Coarser than 36s	34.40 - 40.20

Marketing Lamb

Lamb vs. mutton

Lamb is the meat from a sheep that is less than one year of age. Mutton is the meat from a sheep that is older than one year. Yearling mutton is intermediate between lamb and mutton and comes from a yearling, a sheep between 1 and 2 years of age. Mutton has a stronger flavor than lamb and is less preferred by the American consumer.

In the live animal, age is determined by the front incisor teeth. In the carcass, age is determined by the presence or absence of a spool or break joint. The break joint is a cartilaginous area of the cannon bone that is not ossified (bony). This joint ossifies with age to become what is called a spool joint.

A lamb carcass has two break joints on the front shanks. The joints are red, moist, and porous. The ribs of a lamb carcass vary in shape and have some redness on the exposed surfaces. A mutton carcass has two spool joints. The ribs are wide, flat, and the color of mature bone. A yearling carcass usually has at least one spool joint.

Lamb Grading Standards

Carcass

USDA lamb quality and yield grade standards have been in existence for many years. Quality grades indicate the palatability and eating characteristics of meat. USDA lamb grades are Prime, Choice, Good, and Utility. From 1989 to 2008, more than 90 percent of lamb carcasses graded Choice. Fatter lambs grade Prime. Good and Utility lambs are rare. Quality grades are evaluated subjectively based on factors that relate to the palatability of the cooked meat (maturity and flank fat streaking, flank firmness) and conformation which is used to predict the percentage of the carcass comprised of the more valuable, lean cuts.

Yield grade standards (https://www.ams.usda.gov/grades-standards/slaughter-lambs-yearlings-and-sheep-grades-and-standards) estimate the percentage of closely trimmed, boneless retail cuts from the leg, loin, rib, and shoulder. They are based on the amount of external fat in the carcass. The grades are 1, 2, 3, 4, and 5, with 1 being the leanest and 5 being the fattest. Most lambs grade 2 or 3. In the commodity market, yield grade 1s, 4s, and 5s are usually discriminated in price. 4s and 5s are too fat and heavy, while 1s lack sufficient fat cover and quality.

Live

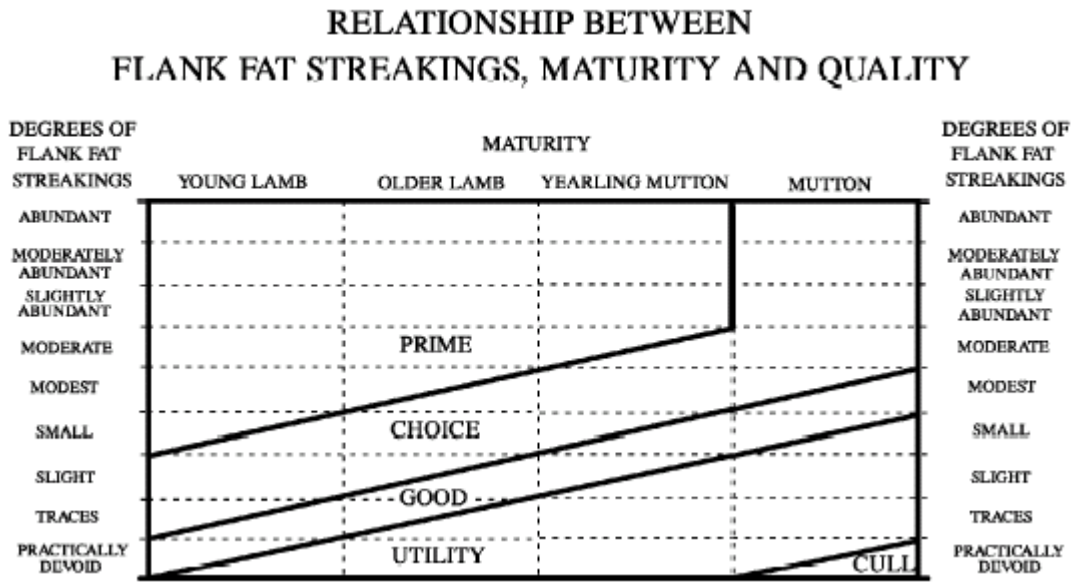
USDA grades for live lambs are the same as the carcass grades. Some states in the Northeast (e.g. New York) have modified the USDA grading standards to better fit the needs of the ethnic markets. Lambs are graded as Blue, Red, or Green, regardless of weight. Blue lambs are fatter and thicker than red lambs. Green lambs are thin and/or in poor body condition; they are not considered market ready.

Feeder lambs

Feeder lambs are lighter-weight lambs (60 to 90 lbs.) that are usually sold to feed lots for further finishing. They are sold according to weight and frame size, e.g. large, medium, small. Some states have devised their own grading standards for feeder lambs, primarily separating lambs by weight.

Grading is very useful. It provides a uniform means to report prices. With grades and other descriptors, you can compare prices of lambs sold in any part of the United States. Direct marketers can use reported market prices to help them price their lambs.

USDA Quality Grades for lamb



USDA Yield Grades are represented by the numbers **1 through 5**. Yield grade 1 is the highest yielding, while yield grade 5 is the poorest yielding.

Yield grading is calculated using the adjusted fat thickness over the ribeye muscle between the 12th and 13th ribs as follows:
Yield Grade = .4 + (10 X Adjusted fat thickness, 12th rib, inches)

USDA Yield Grades for lamb and fat thickness ranges

Yield Grade	Fat Thickness
Yield Grade 1	.00 to .15 inch
Yield Grade 2	.16 to .25 inch
Yield Grade 3	.26 to .35 inch
Yield Grade 4	.36 to .45 inch
Yield Grade 5	.46 inch or greater

Lambs are typically harvested at 115 to 135 pounds and yield carcasses weighing between 45 and 85 pounds (dressing percentage = 40%). Heavier carcasses that are lean with adequate fat cover receive the highest prices. There are value-based marketing systems currently in place that use a more detailed estimation equation for determining cutability. The factors used are carcass weight, Adjusted fat thickness, body wall thickness and rib eye area. Live and carcass quality and yield grades are outlined with photos of sample carcasses at the following several meats judging web sites. http://www.meatscience.org/page.aspx?id=462

Quality Assurance for Youth Producers

Well-informed livestock producers recognize the importance of following quality assurance guidelines to ensure they provide safe and wholesome food animal products to the public. However, young producers may have a bit of trouble understanding the market livestock projects they raise will ultimately appear on a consumer's plate. Below is a list of recommended actions producers of all ages can take to minimize threats to animal health and product wholesomeness. At the bottom of the page are links to several fun and active learning exercises that can be used with youth to help them appreciate the importance of producing safe, wholesome, high-quality food products for consumers to enjoy.

Producing High Quality Market Animals

- Get all prior identification and treatment records from breeder.
- Use a permanent identification system on each animal.
- Select project animals based on good health, proper weight for age and genetic potential for adequate growth during feeding period.
- Practice low-stress methods of animal handling: slow, quiet, no hitting or crowding.
- Minimize use of medications.
- Use proper injection techniques: Use subcutaneous injections whenever possible. Give intramuscular injections in neck muscle. Divide large injections into multiple sites. Clip and disinfect injection site when possible. Use a sterile syringe for each treatment and a sterile needle for each animal. Use the smallest size needle possible for the injection. Restrain animals well to prevent needle breakage or excessive tissue damage.
- Keep excellent records (feeds, medications, illness, sales, etc.) throughout the animal's life and maintain for five years after sale.
- Abide by all medication use guidelines, including storage, dosages, withholding times and legal extra-label drug use on the advice of your veterinarian.
- Calculate rate of gain needed to meet target weights by target dates; feed for that rate of gain.
- Do not hold or push animals with feeding programs.
- Do not hold animals off water or feed.
- Feed animals a balanced diet.
- Practice routine preventive health care practices such as hoof trimming, vaccinating, and deworming as needed.
- Provide a clean, safe and healthy environment for animals.
- Exercise animals a reasonable amount for adequate muscling.
- When possible, obtain carcass data from market animals; study and learn from the results.
- When possible, interview consumers about what they thought about the food products you raised.
- Make sure market animals are not cryptorchids or have any other disqualifications.
- Avoid offspring of animals known to produce progeny with poor carcass characteristics.
- Practice routine biosecurity measures such as minimizing visitors, isolating sick animals, disinfecting equipment, and quarantining new animals or returning show animals.
- Make sure all family members and farm employees are aware of and perform quality assurance practices

Lamb Skeletal Anatomy

When fabricating the carcass into wholesale and retail cuts, skeletal anatomy provides the framework and landmarks for each of the cuts. Identification of bone-in retail cuts is much simpler when you have a good grasp of the bones associated with each region of the carcass.