

# Marketing Texas Goats

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R. D. LEWIS, DIRECTOR, COLLEGE STATION, TEXAS



## SUMMARY AND CONCLUSIONS

Much of the information given in this bulletin came from a mailed questionnaire sent to farmers and ranchmen in the Texas goat raising areas.

Texas is the major goat-producing state of the nation. About 95 percent of the U. S. Angora goat population in 1955 was in Texas. The total goat population for the State in 1955 was 2,546,000 head, of which 10.6 percent were goats other than Angora. The Edwards Plateau is the major goat-producing area, but there has been a substantial increase in goat population in the West Cross Timbers and Grand Prairie.

Range condition is the major factor that causes farmers and ranchmen to vary the number of goats in their herd. Other factors include mohair prices and the value of stocker goats and of goat meat.

Over 95 percent of the Texas goat producers also have other livestock on the same range. The usual combination includes goats with sheep and cattle. The best gains in weight and monetary returns are obtained when all three types of livestock are grazed on the same range with proper stocking rates.

Spanish goats are produced for meat, brush control and slaughter and stocker sales. Angora goats are raised primarily for the production and sale of mohair. They also are useful for brush and weed control and eventually are sold for slaughter.

The total mohair clip in 1955 averaged 5.8 pounds per goat. Approximately 94 percent of the producers sell their mohair through wool and mohair warehouses. Although grading and sorting are practiced in Texas, about 91 percent of the producers marketed their 1955 mohair in the "original bag."

Approximately 47 percent of the producers sell some of their goats to neighbors and other individual buyers, but over half of the total annual volume passes through stockyards and auctions. Approximately 27 percent of the producers market their goats through livestock auctions and about 20 percent use the Union Stockyards San Antonio. The marketing season starts in March and April and is relatively steady through July, but a larger volume is marketed in August, September and October.

Types of goats that slaughter buyers demand range from the young cabrito to the lean, old goat. The cabrito, a young, fat, suckling kid, usually weighs 10 to 25 pounds. Old goats are preferred by packers because they usually have less fat content in the meat. The dressing percentage of all goats averages about 37 percent of the total live weight.

Some carcass goat meat is sold over the counter like beef, pork and mutton. The cabrito usually is barbecued or baked and is becoming more popular with the general public. All boned goat meat is used in the manufacture of processed meats such as frankfurters, bologna and breakfast sausage.

The supply of goats is seasonal and most producers market their cull and undesirable goats regardless of the price at the time. Apparently there is no short term production or marketing response to high or low prices. Farmers and ranchmen buy and sell goats because of range conditions and the price of mohair, while packers vary their purchases with the spread between prices of goats and canner and cutter cows.

Because of the comparatively small goat population, the market supply of goats has been small. The future Texas goat population may expand substantially. The goat-producing area has expanded. More farmers and ranchmen are raising sheep, cattle and goats together, and the outlook for mohair production, uses and prices is favorable.

## ACKNOWLEDGMENTS

Much of the information for this study was gathered through the help of others. Acknowledgment is made to G. C. Hagelstein, Sr., president and general manager of Union Stock Yards San Antonio, and his associates for their assistance, cooperation and encouragement. The information obtained from managers and employees of packing plants in San Antonio was helpful and appreciated. Acknowledgments are made to the managers of livestock auctions in the Texas goat-producing area for their aid in gathering market information, and to the many farmers and ranchmen who supplied much of the data used in the study.

# Marketing Texas Goats

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THE MAIN PURPOSE of this study is to summarize pertinent information on the marketing and consumption of Texas goats. Emphasis also is given to the goat population, areas of production, types and uses of available markets, the demand for and uses of goat meat and the factors affecting prices of goats.

Much of the information used came from a mailed questionnaire sent to farmers and ranchmen living in the goat-producing areas of Texas. Usable replies were received from 1,135 farmers and ranchmen operating over 4 million acres and having 632,550 Angora and 24,358 Spanish (or Mexican) goats. This represents over 25 percent of the goat population in Texas as reported in the 1955 U.S. Census of Agriculture.

Information on the practices and methods used in marketing goats through livestock auctions and Union Stock Yards San Antonio was obtained by personal interviews with the managers or owners of the establishments.

Texas, Missouri, New Mexico, Arizona, Utah, Oregon, California, Oklahoma and Arkansas are the nine major goat-producing states, but Texas had 95 percent of the total Angora goat population in 1955.

Angora goats were imported to the United States from Angora (Ankara, Turkey) as early as 1849. Colonel W. W. Haupt of Hays county, introduced the Angora goat industry to Texas in 1858 through the purchase of eight purebred Angora. Other pioneer Texas goat breeders included Jeff Davis Pepper and Virgil A. Brown of Edwards county. Chas. Schreiner, a banker, warehouseman and storekeeper of Kerr county, encouraged the production of mohair goats. His influence extended over Kerr, Hays, Gillespie and Kendall counties.

Bob Davis, formerly county judge of Uvalde county, has worked with the goat industry for 62 years. Most of the credit for bringing the American Goat Breeders' Association to Texas goes to Mr. Davis.

The Angora goat has a coat of white mohair that is in ringlet or flat locks and corresponds to the wool covering of sheep. Angora females raised under Texas conditions and over 2 years old weigh 60 to 100 pounds; the males at the same age usually weigh 100 to 150 pounds. The eyes are bright and alert, but the ears of an

Angora are drooping and point downward. Both male and female have grayish horns, although there are hornless Angora goats. Horns of the male have an inward spiral twist, inclining backward and outward; horns of the female rise upward and backward.

The Spanish goat sometimes is called the Mexican or common goat by the farmers and ranchmen of Texas. Most of them have a brownish-black coat of short hair (of no market value) with white trim on the head and legs, but the colors range from dull white to black. These animals are larger than the Angora, with similar body conformation, but often are heavier. Horns of the male Spanish goats usually have the same backward and inward spiral twist as those of the Angora buck, but some males and many females do not have horns.

Spanish goats have been in the United States for a long time and probably were brought over from Europe by Spanish explorers. There are no known formal writings or literature on the subject. Spanish goats are not a breed in the same sense as Angora goats, Rambouillet sheep or Hereford cattle, but by common parlance the common mixed non-Angora goats of the Southwest are called "Spanish."

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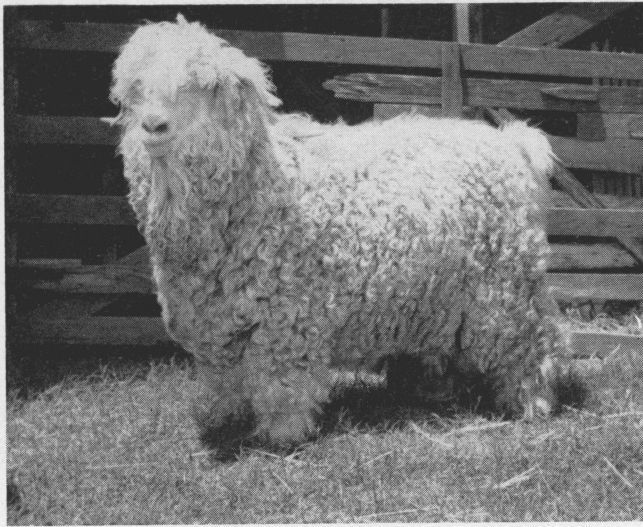


Figure 1. The Angora goat has a valuable coat of white mohair.

Spanish goats were used in crossing with the early mohair goats. The Angora buck was crossed with the Spanish doe and in a period of five generations the goats were referred to as "full bloods," having all the characteristics of the grade Angora goat. This practice has been discontinued as the population of Angora goats increased.

A widely publicized contest was held in 1922 by the Sheep and Goat Raisers Association of Texas to select a trade name for goat meat comparable with beef, pork, mutton and lamb. The name *chevon* was adopted by the association in August 1922. It was accepted by the U.S. Department of Agriculture and by Webster's Dictionary. Although campaigns were conducted to get chevon into common usage, it is not widely used by people in the meat processing industry.

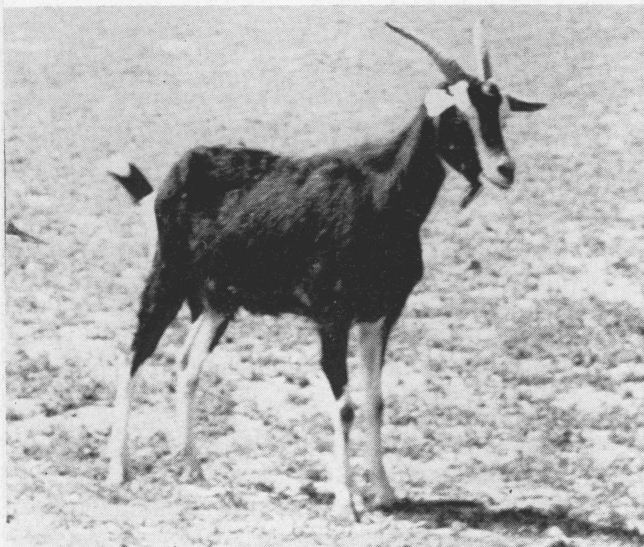


Figure 2. Most Spanish goats have a brownish-black coat of short hair with white trim.

## PRODUCING AREA AND POPULATION

In the early 1930's, goats were concentrated on the Edwards Plateau of Texas with a few scattered in the Trans-Pecos, Grand Prairie and Rio Grande Plain (Figure 3). These areas are dry and hilly with shallow, stony soils, and have mostly live oak and shin oak brush as vegetative overstory.

The goat population increased from 1930 to 1940 and spread out of the original producing areas. By 1940, increased goat numbers were reported in the West Cross Timber and Rolling Plain which lie north and northeast of the Edwards Plateau. Also in the period, 1930 to 1940, Spanish goat numbers shifted to more counties of the East Texas timber country.

"Other" goats and kids represented 5.9 percent of the total goat population both in 1930 and 1940. In 1955, 10.6 percent of the Texas goat population were goats other than Angora.

The major goat-producing area in 1955 was in the Edwards Plateau but there had been a substantial movement north and northeast into the West Cross Timbers and Grand Prairie (Figure 4). Edwards County had the highest county goat population for the span of 25 years since 1930. In 1955, it was followed by Kimble, Kerr and Val Verde counties. Some of the counties that have had large increases in goat population are Coryell, Mills, Brown, Lampasas, Hamilton, Erath and Palo Pinto. Goat production in these counties generally has been profitable and satisfactory.

Much of the land in the West Cross Timbers that was farmed in the 1930's has reverted to livestock production. Trees and brush common to this area can be grazed profitably by goats. Major species include post oak, live oak, pecan and mesquite trees. The topography of the land is well suited to goats.

In the past 25 years, the number of goats in Texas has fluctuated between a maximum of 3,465,000 in 1942 and a minimum of 1,994,000 in 1953. The goat population of Texas in 1955 was 2,546,000 head, which is about 919,000 less than in 1942 (Table 1). The preliminary figure for 1956 is 2,775,000 head, or approximately 229,000 more goats in Texas than in 1955.

From 1947 to 1950, the Texas goat population dropped almost 1 million head. The drop was attributable mainly to drouth conditions, but low prices of mohair helped to cause reduced numbers.

The drouth in the goat producing area was intensified in 1951. The grazing capacity dropped and the number of goats on the ranges decreased.

With drouth conditions still prevailing in 1954, farmers and ranchmen of the Edwards Plateau tended to resume goat production and further reduced sheep and cattle numbers.

In the early part of 1955, the area still had no rain, but mohair prices were relatively attractive. Some moisture fell in the goat producing area during the latter part of 1955 and improved range conditions. The price of mohair held steady. Apparently these conditions are responsible for the larger goat population in 1956.

Texas goats were valued at 14 million dollars on January 1, 1955, according to the U.S. Department of Agriculture, compared with 21 million dollars for hogs, approximately 54 million dollars for all sheep and 561 million dollars for all cattle. Changes in both prices and numbers have caused great fluctuations in the total value of goats in the past 25 years. The lowest value of Texas goats was about 3 million dollars in 1935, with a price of \$1.15 per head and a population of approximately 2,650,000. Goats were valued at 21 million dollars in 1951, which was the high, with a price of \$9.50 per head and a total of 2,233,000 goats (Table 1). The preliminary value of the Texas goats for 1956 is \$19,425,000.

The population of goats in Texas is more stable than the prices because there are many producers who always run goats on their ranges. Others expand or decrease goat numbers in response to environmental and economic situations.

The growth of brush, weeds and trees in any area can bring about changes in the total goat population. Although most farmers and ranch-

TABLE 1. NUMBER, VALUE PER HEAD AND TOTAL VALUE OF GOATS ON FARMS AND RANCHES, TEXAS, JANUARY 1, 1930-55<sup>1</sup>

Year	Value per head	Total number	Total value
	Dollars	1,000 head	1,000 dollars
1930	4.90	3,117	15,273
1931	3.00	3,110	9,300
1932	1.35	3,225	4,354
1933	1.10	3,000	3,300
1934	1.35	3,200	4,320
1935	1.15	2,650	3,047
1936	2.40	2,700	6,480
1937	3.80	2,890	10,932
1938	2.80	3,050	8,540
1939	2.80	3,142	8,798
1940	3.20	3,205	10,256
1941	3.40	3,397	11,550
1942	4.40	3,465	15,246
1943	3.75	3,350	12,562
1944	4.35	3,316	14,425
1945	4.30	3,448	14,826
1946	4.75	3,276	15,561
1947	5.35	3,112	17,002
1948	5.65	2,956	17,238
1949	4.70	2,306	11,473
1950	5.70	2,168	13,082
1951	9.50	2,233	21,214
1952	8.60	2,121	18,241
1953	6.40	1,994	12,762
1954	6.60	2,233	14,738
1955	5.50	2,546	14,003
1956 <sup>2</sup>	7.00	2,775	19,425

<sup>1</sup>Agricultural Marketing Service, USDA, Austin, Texas, Agricultural Estimates, February 2, 1956.  
<sup>2</sup>Preliminary.

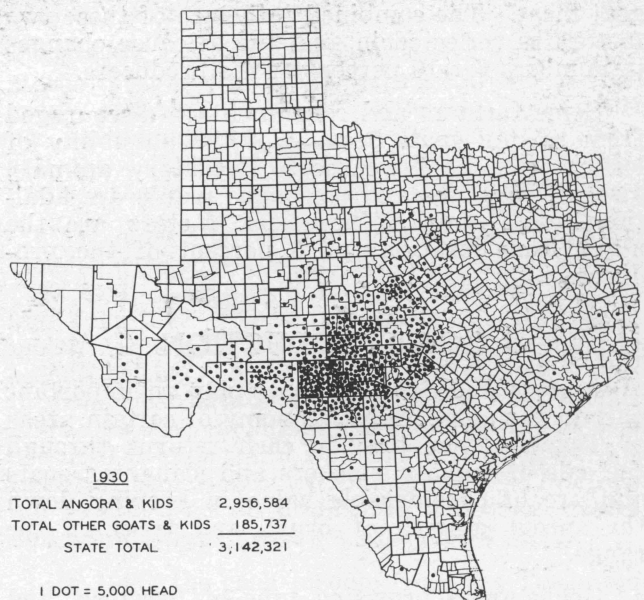


Figure 3. Producing area and population of goats in Texas, by counties, 1930.

men tend to increase the number of goats in wet years, other producers increase during dry years to facilitate land clearing. Goats will give producers cash returns under drouth conditions. About 73 percent of the producers interviewed gave range conditions as the major factor causing them to change goat numbers.

The value of mohair is a factor in the goat population, and 11 percent of the producers consider it of primary importance. If the value of mohair was not considered, more producers would be raising Spanish than Angora goats.

Other factors that have some influence on goat numbers are the values of stocker goats and

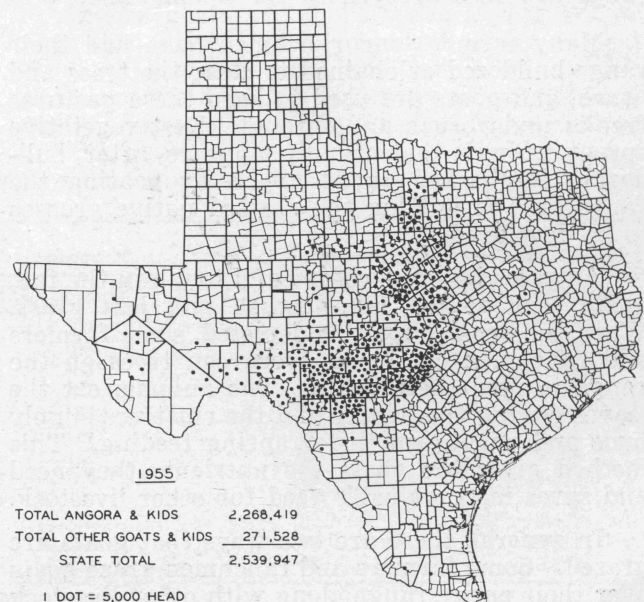


Figure 4. Producing area and population of goats in Texas, by counties, 1955.

goat meat. The combined influence of these two factors as reflected in goat prices cause changes in numbers for 10 percent of the producers.

Some farmers and ranchmen are discouraged from raising goats because of the possibility of loss in wet, cold weather. Predatory animals, disease, parasites and poisonous plants are additional deterrents. These risk factors are the major consideration for 6 percent of the producers.

## GOAT PRODUCTION

Angora and Spanish goats play an important part in the agricultural economy of certain areas of Texas. They provide cash returns through the sale of mohair, stockers and slaughter goats and are of considerable value in keeping down the sprout growth of brush and trees on the range.

Goats are a browsing type of livestock, and even though they do eat some grass, they seem to prefer buds, fresh leaves, tender twigs of brush and weeds. An area of sprout growth from brush and trees is an ideal goat range.

Oaks are probably the most important plant food for goats in Texas. In a dense shin oak or live oak brush range, goats soon clear the underbrush to approximately 5 feet from the ground, leaving the appearance of a clean, well-kept pasture. Goats rear up to browse higher on the trees, using their front feet as supports. Spanish goats, being a little larger than Angoras, usually clear the underbrush up to 6 feet high.

Berries of cedars and junipers are eaten by goats in certain seasons of the year, but the leaves are not heavily grazed. Goats will eat the leaves or tear the bark from these trees if the range has been overgrazed for a long time.

Many farmers and ranchmen have had their range bulldozed or chained to clear the trees and brush, and goats are used to keep these pastures free of underbrush and sprouts. Fast vegetative sprout growth that usually appears after bulldozing is checked or destroyed by goating the range and permitting the desired native grasses to be developed.

As grass becomes coarse and tough in the fall, goats tend to eat more brush and less grass. When the brush supply is depleted, some farmers and ranchmen cut small evergreen trees on the range to feed their goats. The animals eat the leaves during the winter and the cut trees supply buds and quick growth for spring feeding. This method gives the goats the nutrients they need and saves more valuable feed for other livestock.

In general, there are two ways that goats are grazed. Some farmers and ranchmen graze goats over their entire range along with other livestock throughout the year, while other producers rotate their goats from one pasture to another. Since

goats seem to prefer the fresh growth, the range rotation plan has an advantage over the other method because the brush in some pastures can develop while other pastures are being used. Under proper stocking, both systems are practiced successfully.

Results of the mailed questionnaire showed that Crockett county had the maximum average acres of range per goat. The 12-acre average is due mainly to the limestone type of soil and the cedar and mesquite brush which predominates in this county. Coryell county had the minimum average of 1.6 acres per goat. This county has prairies and timbered hills that are characteristic of the Grand Prairie of Texas with rich sandy loam and black soils. The principal species of brush and trees are oak, elm, ash, pecan and cedar.

Over 95 percent of the goat producers have other livestock on the same range with goats. The usual combination includes goats, sheep and a smaller number of cattle. A study made recently in Sutton county by the Texas Agricultural Experiment Station on grazing combinations of goats, sheep and cattle showed that best gains and returns were achieved when all three types of livestock were grazed on the same range.

Advantages in grazing all three types of livestock together are the improvements made both in cattle and sheep production. A slight gain of body and mohair weight of goats is obtained when they are grazed with cattle only as compared with grazing with both cattle and sheep. However, the gain is not enough to be significant.

Sheep tend to have more body weight gains and heavier wool when they are grazed with both cattle and goats. Cattle grazed with sheep and goats make a slight gain the first 2 years, but the gains become more pronounced during the next 3 years.

The largest investment in equipment for goats is the fence around the pastures. The usual fence includes 36 or 42-inch woven-wire fencing with barbed wire above. The woven wire is put near the ground and two or three strands of barbed wire are stapled above, making the total height of the fence about 50 to 60 inches. Some fences are made of barbed wire only and have 8 or 10 strands spaced so that the total height is the same as woven-wire fence. Goats may form troublesome fence-breaking habits as the results of poor or careless fencing on ranges. Care should be taken in selecting the woven-wire fencing for the head and horns of a goat can get caught in fencing with 6-inch mesh. Fence with diamond shaped mesh is satisfactory for goats.

## Reasons for Raising Goats

Spanish goats are produced for home meat consumption, brush control and for sale. Sales usually are for slaughter purposes, but some Spanish goats are purchased as stockers. Farm-

ers and ranchmen who raise Angora goats usually have a few Spanish does on the range to provide the meat for home slaughter. This meat is used especially during the shearing and kidding seasons to feed the help hired at this time.

Angora goats are raised primarily for the production and sale of mohair. They also have high value for brush and weed control but usually are not raised for slaughter purposes. However, most of them are eventually sold for this purpose because of age and decreased production of mohair. More Angora than Spanish goats are marketed as stockers, but stocker sales are not as important financially to the producer as are mohair production and the control of brush and weeds.

Approximately 96 percent of the farmers and ranchmen having goats on their range reported profits from their goat operations in 1955. Even during 1950-55 when drouth conditions prevailed, most producers reported net profits from goat production.

Following is a summary showing the portion of producer's ranch income received from goat production. This includes 849 producers in the major goat-producing area. About half of both large and small goat raisers in Texas receive more than a fourth and less than a half of their total ranch income from goats.

Percent of goat producers:	Proportion of total ranch income derived from goats:
4.0.....	Less than 1/4
52.6.....	1/4 and less than 1/2
27.6.....	1/2 and less than 3/4
15.8.....	3/4 or more

About 16 percent of the producers received over three-fourths of their income from goats, but only 2 percent received all of their ranch income from goat production. The average income obtained from goats was 38 percent of the total ranch income.

## Mohair Production

Mohair, the fleece of the Angora goats, is one of the most useful of all natural fibers. It dyes easily and retains the color well. Mohair has become popular in blends with synthetic fibers and also is used in combinations of cotton, wool and synthetics.

The older and coarser mohair or fleeces are blended with coarse wools and are used in making rugs and upholstery for automobiles, airplanes and furniture. Next important use for coarse mohair is saddle blankets, girths and, to some extent, belting. A better grade of mohair is used in draperies, hats and heavy garment materials. Kid and some yearling hair blended with fine wool are used in men's and women's suiting materials, ties and sheer weight evening dresses. The finest kid hair is used for decorative trimming, babies' and adults' light sweaters and men's socks.

In 1955, the cash income from the Texas mohair clip was \$13,613,000. This is an increase of 33 percent above the \$10,218,000 of 1954 as a result of a rise in goat population, average clip per goat and mohair prices (Table 2). The value of 13.6 million dollars for mohair compared favorably with the 19.9 million dollars for Texas wool in that same year.

The average clip, including both adult and kid hair, increased three fourths of a pound in the 12-year period, 1944-55. This increased production per goat has been caused mainly by the selection of heavier-fleeced bucks for breeding herds. The fleece weight for the spring clip of Texas in 1955 averaged 3.7 pounds for grown goats and 3.1 pounds for kids. The fall mohair clip averaged 3.9 pounds for grown goats and 2.2 pounds for kids. Total yearly clip averaged 5.8 pounds (Table 2).

Angora goats are shorn twice a year and almost the entire clip is marketed twice a year. Although some farmers and ranchmen contract the sale of their mohair before the shearing season starts, approximately 94 percent of the producers

TABLE 2. NUMBER OF GOATS CLIPPED, MOHAIR PRODUCTION, AVERAGE PRICE PER POUND AND CASH INCOME RECEIVED BY FARMERS, TEXAS, 1944-55<sup>1</sup>

Year	Total clipped	Average clip	Mohair production	Price per pound	Cash income
	1,000 goats <sup>2</sup>	Pounds	1,000 pounds	Cents	1,000 dollars
1944	3,570	5.1	18,200	61	11,102
1945	3,845	5.3	20,190	56	11,306
1946	3,580	5.0	17,880	62	11,086
1947	3,390	5.1	17,202	54	9,287
1948	2,946	5.1	15,184	46	6,985
1949	2,373	5.2	12,314	47	5,718
1950	2,350	5.4	12,643	77	9,735
1951	2,294	5.4	12,280	119	14,613
1952	2,125	5.5	11,670	98	11,437
1953	2,167	5.6	12,160	89	10,822
1954	2,568	5.7	13,997	73	10,218
1955	2,831 <sup>3</sup>	5.8	16,401	83	13,613

Agricultural Marketing Service, USDA, Austin, Texas, March 7, 1956.

<sup>2</sup>Sum of the goats and kids clipped in the spring and of the kids clipped in the fall.

<sup>3</sup>Preliminary.

sell through wool and mohair warehouses. The other 6 percent sell to other local buyers or directly to mills.

Most of the mohair is marketed in burlap bags. The "original bag" was the earliest marketing method in Texas, and was used in 1955 by 91 percent of the producers. Adults and kids are sheared separately and the mohair is put into different bags at the shearing platform because of the premium paid for kid hair. This premium is due to the fineness of the fiber, extra luster and softness and relative freeness from kemp. The producer brings the bags to the warehouse where the mohair is weighed and sold.

In mohair, the kemp is generally coarse, dull-white, stiff hair which may be interspersed with the true mohair fibers. Kemp fibers which may be short or long, are more prevalent in unimproved goats than they are in the more highly bred Angora. This type of hair is undesirable in cloth manufacturing and its removal, through proper breeding, improves the quality of the mohair clip.

In grading mohair, each fleece is separated into different grades based on the fineness or quality of the hair and length of staple. The hair usually is divided into three or four parts such as the fleece from the shoulder, side and thigh.

In sorting mohair, the fleece is picked and torn apart. The lock or locks of mohair on the thigh that are of the same fineness and texture as the lock on the shoulder are picked out and placed together, and so on.

By sorting, some of the mohair of an older goat may have enough fineness to pass as kid hair and a better average price may be obtained. The same method results in some of the kid mohair being graded as adult hair because of coarseness. Most of the wool and mohair warehouses in Texas do not grade and sort the mohair prior to sale.

## MARKET AGENCIES FOR GOATS

Kansas City was an important market for both stocker and slaughter goats early in this century. After 1918, when packers were required



Figure 5. Some goats must be graded and sorted before they are sold.

by law to label the carcasses "goat meat" or "goat" rather than mutton, the goat trade decreased at this market. Direct shipments of goats from Texas to Kansas City dropped from 9,027 head in 1924 to only 300 head in 1927.<sup>1</sup>

Almost from the beginning of the Union Stock Yards San Antonio in 1889, a few goats were sold and weighed in the cattle division. In the late 1920's and early 1930's the volume of goat receipts increased to a point requiring additional facilities. In 1937, all goat and sheep marketing were moved to a separate division.

Development of an outlet for slaughter and stocker goats brought increased volume and additional buyers. In 1940, the U. S. Department of Agriculture required this market to count goats separately from sheep and quote prices separately in official market news reports. It has continued to be the major pricing point for goats since that time.

Approximately 47 percent of the producers in Texas sell some of their goats to neighbors and other individual buyers. Most of them own less than 250 goats and the annual total number of goats marketed by each producer is small. Approximately 27 percent market their goats through the livestock auctions and about 20 percent use Union Stock Yards San Antonio. Over half of the total volume of goats sold annually passes through auctions and stockyards because these types of markets are used by both large and small producers. Producers who sell direct to the packer or butcher represent only 6 percent of the total number of producers.

Most goats are shipped to market in pickups or larger trucks. Less than 1 percent of the producers ship by rail. Pickup trucks usually are owned by the producers, but about 10 percent hire pickups to transport their goats to market. Approximately 30 percent of the producers who raise goats have their own large trucks. These usually are the producers having over 500 goats plus other livestock on their range. The others hire large trucks when the size of the load justifies it.

Stocker and slaughter goats are the two major types marketed. Stocker goats are kids, does or wethers that are young enough to put back on the range for kid or mohair production. Slaughter goats consist of mature animals marketed as boning or carcass goats and kids marketed as cabrito goats.

## Union Stock Yards San Antonio

Goats that arrive at Union Stock Yards are unloaded, counted and put into pens assigned to the producer's market selling agency, the commission company. Several individuals, partnerships, corporations and a cooperative association

<sup>1</sup>Lewis, George M., An Analysis of Shipments of Texas Sheep and Goats, Bureau of Business Research, the University of Texas Bulletin 3034, September 8, 1950.



operate in this capacity. Each marketing agency usually has one or two salesmen who specialize in sheep and goat selling.

The marketing agency counts and grades or sorts the goats. They are separated for differences in age, condition or type to get uniform groups. This makes them more attractive to buyers and results in a better average price for the consignment. If the goats appear to be uniform, no sorting is necessary.

Each buyer makes his bid for the pen of goats when he has his turn. After the goats are sold they are weighed and counted at the scales.

Transportation charges (if any), yardage costs and commission charges are deducted from the selling price. Under the Texas Railroad Commission tariff, a truck, where no weights are available, will move livestock 100 miles for 39 cents per mile. A 3 percent tax on the total freight charge is added. Yardage fee at the Union Stock Yard is 17 cents per goat. If the animals are fed, the feed cost is added to the yardage charge.

The commission charge is determined by the total number of head in each consignment and the cost per head decreases as the number of head increases. The commission charge is set and regulated by the Federal Government and is subject to change every 2 years, but actually is not often changed. Commission charges for goats in the Union Stock Yards San Antonio, in 1955 were:

Consignments	Commission per head, cents
One head only.....	50
First 25 head in each	
250 head in each consignment.....	30
Next 50 head in each	
250 head in each consignment.....	25
Next 75 head in each	
250 head in each consignment.....	20
Next 100 head in each	
250 head in each consignment.....	12

For a consignment of 250 goats, the total commission charge is \$47.00, and the total yard-

age fee at 17 cents per head is \$42.50, for a combined total of \$89.50 for marketing service and facilities.

Two possible advantages in marketing goats at the Union Stock Yards are the service received from the marketing agencies and the concentration of buyers. Since most of the goat producers are over 50 miles from San Antonio, the distance that must be traveled before reaching the market is a disadvantage. Transportation cost increases as the distance traveled increases. Shrinkage also increases somewhat with distance but is greatest within the first few miles.

## MARKET SEASON

Monthly and annual salable receipts of goats at the Union Stock Yards San Antonio are shown in Table 3. These figures have been affected considerably by the prolonged drouth occurring in the major goat producing areas during the past 6 years. Annual receipts also declined considerably after 1949 as a result of low mohair prices which brought about liquidation of great numbers of goats.

The main season for goat marketing starts in March and April and the volume is relatively steady through July. Larger volumes of goats are marketed in August, September and October than in other months. The smallest number of goats are marketed through the Union Stock Yards in December, January and February.

The number of goats marketed increases in the spring and fall because farmers and ranchmen are working with their goats during these seasons. Angora does kid in the spring and all Angora goats are shorn in the spring and fall. Since goats are handled at shearing and usually at kidding time, culls and surplus goats are sorted and sent to the markets at that time. This saves the farmer or ranchman the trouble and time of penning the goats again at a later date.

Marketing of Angora goats, producing both mohair and meat, varies more than does that of Spanish goats. The Spanish goat is used for meat and the volume of marketing in the San Antonio market usually is fairly steady with a slight increase in volume in the spring and fall.

TABLE 3. SALABLE RECEIPTS OF GOATS, BY MONTHS, UNION STOCK YARDS SAN ANTONIO, 1946-55<sup>1</sup>

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
	Number												
1946	3,681	5,149	6,734	9,785	10,051	13,506	14,242	21,080	36,141	21,842	7,601	6,725	156,537
1947	2,887	4,897	4,105	9,425	7,932	3,097	12,065	28,623	45,916	25,083	12,772	13,313	170,115
1948	11,049	17,197	30,286	31,744	37,415	37,337	25,316	62,319	66,691	51,542	36,249	21,625	428,770
1949	11,835	15,878	13,911	10,707	18,077	22,063	23,929	38,802	32,846	17,440	11,901	8,217	225,606
1950	9,934	4,928	4,752	5,242	7,818	2,933	4,269	15,171	12,109	7,094	3,939	4,163	82,352
1951	5,707	5,298	5,847	7,604	4,509	5,250	7,745	15,565	20,764	24,793	8,299	4,166	115,547
1952	6,537	2,735	4,205	4,948	2,936	2,598	4,252	12,250	15,937	7,680	3,917	1,942	69,937
1953	1,335	2,817	4,438	4,381	3,660	5,282	7,715	14,306	13,534	6,817	6,622	2,194	73,101
1954	3,537	2,649	7,523	4,894	6,209	7,417	7,351	21,000	14,805	6,199	4,897	4,170	90,651
1955	3,333	2,604	4,661	5,527	8,126	5,721	5,441	10,646	12,198	8,504	7,027	3,235	77,023
Total	59,835	64,152	86,462	94,257	106,733	105,204	112,325	239,762	270,941	176,994	103,224	69,750	1,489,639

TABLE 4. ANNUAL SALES OF GOATS AT MILLS COUNTY COMMISSION COMPANY, 1951-55

Year	Number
1951	79,096
1952	88,210
1953	98,950
1954	140,518
1955	151,599

Another factor causing farmers and ranchmen to cull and market their goats is the condition of their ranges. When the number of head increases to the carrying capacity of the range, culls and surplus goats are sent to market. The weather helps determine this carrying capacity. When rainfall has been low over a period of time the capacity of the range decreases and the producer curtails the number of animal units carried.

The price of mohair also is considered when marketing Angora goats. When the price is up and the future seems favorable, there is an increased demand for stocker goats, tending to raise prices. When the price of mohair is down, the demand for stocker goats declines and the supply of slaughter goats tends to increase.

### Marketing at Auctions

In November 1955, there were 19 livestock auctions located in the goat producing area of Texas. About half of these auctions were used by producers in marketing goats. The livestock auction that handles the largest volume of goats is located in Mills county at Goldthwaite.

Annual salable receipts of goats in this livestock auction have increased considerably during

the past 5 years. Salable receipts at the Mills County Commission Company during the past 5 years are shown in Table 4.

Some other important goat auction markets are in Kerrville, Uvalde, Fredericksburg, Lampasas and San Saba.

Although slaughter type goats are sold at each sale, over half of the goats that go through a livestock auction usually are stockers.

Goats are brought to the auction in a truck or pickup and trailer and are tagged, unloaded, counted and driven into holding pens. They are moved to a cutting chute where they are sorted by market employees just before entering the sales ring. The auction owner or his representative usually checks the animals' ages and tells the buyers obvious facts about them.

Since the auction operator usually starts the bidding, he buys some of the stock during the market day if the opening bid is too high. The opening bid usually is just below the probable selling price. This shortens the bidding time and speeds up the sale.

Buyers usually represented at auctions include farmers and ranchmen, packers, local butchers and livestock dealers.

If the goats are sold by the pound, they are weighed and put in holding pens for the buyers. If they are sold by the head, weights are not required.

The owner may choose to accept the final bid and sell the stock, or he may take the goats home if the selling price is unsatisfactory.



Figure 6. Farmers and ranchmen compare the pens of goats at the Mills County Commission Company auction at Goldthwaite before going inside to bid.

TABLE 5. VOLUME OF STOCKER AND SLAUGHTER GOATS FORWARDED BY RAIL AND TRUCK FROM UNION STOCK YARDS, SAN ANTONIO, 1955<sup>1</sup>

Month	By rail	By truck			Total
		For local slaughter		Others including	
		Packers	Butchers	other packers and stocker buyers	
Number					
Jan.	—0—	1,513	502	1,344	3,359
Feb.	—0—	695	675	276	1,646
March	188	2,549	740	1,858	5,335
April	—0—	2,410	817	2,110	5,337
May	—0—	3,859	780	2,394	7,033
June	740	3,181	888	311	7,920
July	—0—	2,218	424	3,219	5,861
Aug.	—0—	4,997	639	4,064	9,700
Sept.	655	7,667	473	4,310	13,105
Oct.	—0—	5,068	452	2,758	8,278
Nov.	250	3,313	159	3,951	7,673
Dec.	—0—	1,980	314	971	3,265
Total	1,833	39,450	6,863	30,366	78,512

Furnished by Union Stock Yards San Antonio

The producer is required to pay a yardage and commission fee at auctions, but it usually is combined in one charge. The charges are not uniform among auctions. Some charge by the head, 20, 25 or 30 cents each, and others charge a percentage of the gross receipts. An extra charge for feed is added if feed is used. The Mills County Commission Company charges 30 cents for each pair of does and kids, 30 cents for each single up to 10 goats and 20 cents per head for all consignments over 10 goats. A shipment of 250 goats at this auction would cost the producer \$51.00 for commission and yardage.

## DEMAND AND USE OF SLAUGHTER GOATS

All goats qualify for the slaughter type classification. Although stocker goats usually are those young enough to be put on the range for production purposes, they may be classified as slaughter goats by packers and butchers at markets. Packers and butchers buy Spanish or Angora, young or old, and fat or lean goats for slaughter purposes.

### Buyers of Slaughter Goats

Three meat packing companies in San Antonio buy more slaughter goats than all other buyers combined. The Melton Provision Packing Company, San Antonio Packing Company and Apache Packing Company, all located in San Antonio, bought about 50 percent of the goats sold at San Antonio in 1955 (Table 5).

Most of the slaughter goats are bought through the Union Stock Yards San Antonio and through public auctions located in the goat producing area. Some direct buying from individuals is done by packers.

Receipts at the stockyards have been decreasing so that the packer cannot satisfy his demands by buying through the central market alone. To have enough goats and maintain business oper-

ations, the large goat slaughtering plants buy goats at stockyards, auctions and on individual ranches. Improved highways, truck transportation and greater convenience for the ranchmen have favored decentralized goat marketing.

Other packers in San Antonio and surrounding areas operating at smaller capacity usually buy 50 to 250 goats at a time. These packers regulate their buying according to the price of goats, demand and time of the year, and do not follow a steady buying procedure. If goat meat is not in good demand at the time, the meat is stored for future use. Packers buy goats when prices are favorable and possible profit can be realized after slaughter and storage costs are deducted. This type of packer gets in and out of the goat market, depending on the demand for and price of goat meat.

During the last part of December, January and part of February, some packers use goats as a filler between heavy runs of cattle. Goats are the cheapest type of livestock that can be processed to keep the labor busy and help pay the operating costs.

Some of the slaughter goats in the stockyards, auctions and on farms and ranches are bought by local butchers. Butchers usually buy 1 to 50 head at a time. The goats are retailed as carcass meat or used in sausage manufacturing.

The cabrito type of goat is bought by packers, butchers and individuals. This 8 to 10-week-old goat, weighing 10 to 25 pounds, is a young, fat, suckling kid. There is some difference of opinion among individuals as to the age and weight of a cabrito, but after reaching 25 pounds, the meat tends to lose the kid flavor.

### Goats for Packers and Butchers

The packer intending to bone goat carcasses prefers lean, drawn goats to other types because of the specifications established by buyers of



Figure 7. Many wethers or mutton-type goats are sold to packers through the Union Stock Yards—San Antonio.

boned goat meat. Some require not more than 5 to 8 percent fat content in the meat, others permit 15 to 20 percent fat content.

The packer looks for goats free of disease and bruises. This is reflected in the price offered for the animals since bruised portions and diseased animals are unusable.

Butchers look for goats in good flesh. Most of their retail sales are cuts from the carcass or the fat cabritos. Butchers provide the goat meat and cabrito used by the consumers for barbecue and baked meat dishes. Although goat meat dishes are becoming more popular with the general public, most of the present consumers are Latin-Americans. The consumers prefer tender meat from a young goat in good condition to the meat of a mature goat.

Butchers compete against the packer and stocker buyers for young goats in good flesh.

### Goat Processing

After the goats have been bought by the meat packing companies, they are moved from the market to the packing plant. Most all shipments from stockyards, auctions and individuals are made by truck.

Goats are placed in pens which usually are located in back of the packing plant and are held in these pens until driven into the plant. Then the goats are forced into a small area where a man, called a "shackler," grabs one leg of the goat and hooks it on a moving hoist. The hoist lifts the hook and goat up and automatically places the goat on the bleeding rail.

After the goat has been stuck and bled, the hook is removed and the goat is placed on a swivel hook conveyer. The goat is now hanging by both hind feet on the swivel hooks. The conveyer brings the goat to the "rumper," who removes the pelt from around the tail and down



Figure 8. The cabrito type of goat is bought by packers, butchers and individuals.

to the rump of the goat. The "backer" grabs the goat and drops the pelt to the shoulders. At the same time, the "sider" removes the pelt from the flanks. The goat is turned and the "breasting" crew takes the hide off the breast. The "hide dropper" finishes the job of removing the pelt and cuts the skin off just above the head.

The goat is run through a water sprayer and is washed before the next procedure is started.

A "gutter" opens the goats from the pelvis to the brisket and the viscera are removed and put in a pan on an automatic conveyer-type table. The conveyer table is moving at the same rate of speed as the conveyer so that the goat and viscera will remain side by side. The "breaster" opens the brisket and removes the "pluck" which consists of the liver, heart and lungs. This is placed on a small pan in back of the viscera pan.

If the packing plant is under Federal inspection, the inspector will then check the goat carcass, viscera and the pluck for abnormalities. Some of the causes for a goat to be condemned for meat purposes are:

1. Carcasses showing well-marked lesions (puss pockets in the glands) on the viscera and bones are rejected. Very slight lesions on a thin carcass may pass without restrictions.

2. A well-nourished carcass with well-marked lesions on the viscera and bones is condemned. A well-nourished carcass with only slight lesions in one part of the carcass may pass the inspections. The infected area is removed from the carcass.

3. Animals having diseases or conditions such as pneumonia, emaciation, icterus (carcass showing yellow or green color), pyemia (abscesses over the carcass) are condemned by the meat inspectors.

All condemned meats are denatured by cutting the meat in small strips and by pouring carbolic acid over the strips. Such meat is sold to commercial fertilizer companies.

After inspections are completed, the head is removed and the horns are sawed off. The head is placed on a table where the tongue and cheeks are removed. The carcass is washed again with water under pressure, trimmed and transferred from the hooks to "trees." Several goats may be hung on one "tree."

The carcasses are washed once more, weighed and put in a chilling room for 24 hours before the meat is deboned. Chilled meat permits easier handling and processing. The bones are removed and the meat is put in 110 to 120-pound boxes. The filled boxes go into the freezer where they are stored until sold.

If the carcass is to be sold whole, it is transferred from the chilling room to the freezing compartment and remains there until sold.

By-products of goats include: bones, offal, liver, lungs, heart, tripe, tongue, cheeks, hide and hair. The brains are not used and usually are sold with the hoofs and horns to rendering plants. If physical facilities for processing by-products are not available in the packing plants, the offal is sold to rendering plants and the pelts are sent to hide companies.

### Dressing Percent

The dressing percent of goats in a packing plant is not determined on each individual but is an average for the total number bought and weighed at one time. Normally top slaughter goats will dress 40 to 43 percent of the live weight. This percentage is calculated by using market scale weight and carcass weights before chilling. The average dressing percent of all goats is approximately 37 percent. Normal chilling shrinkage is about 2.5 to 3 percent of the total live weight. This shrinkage varies with the length of time the carcass remains in the chilling room, the amount of water retained in the carcass from washing and the condition of the meat. Meat can be "wet" or "dry." "Wet" meat is caused by the animal eating fresh green grass or succulent growth. There is more water in the "wet" meat, hence there will be more chilling shrinkage. "Dry" meat can be expected if the animals have not been on a range with new succulent growth. If the carcasses are allowed to remain in the chilling room longer than 24 hours the chilling shrinkage will increase.

The meat retained after the boning process will be 65 percent to 70 percent of the dressed carcass weight. There will be another 1 percent shrinkage in the freezing room.

Following is a hypothetical tabulation of average live weight, dressing percent and shrinkage of mature slaughter goats. It does not represent the figures of any packing company mentioned in this study.

Average live weight, pounds.....	90.0
Dressing percent.....	40.0
Weight of the carcass, pounds.....	36.0
Chilling shrinkage at 3%.....	2.7
Adjusted weight of carcass, pounds .....	33.3
Boning percent.....	70.0
Weight of meat, pounds.....	23.3
Freezing shrinkage at 1% of meat weight.....	.2
Net weight of meat, pounds.....	23.1

### Uses of Goat Meat and By-products

The carcass goat meat is sold over the counter just like beef, pork and lamb. Most of the goat meat is sold near the border of Mexico. There is little demand for goat meat in most of the United States.

The cabrito is a delicacy that is becoming more popular with the general public. The bulk of the cabritos are barbecued or baked in an oven with the heart, liver and lungs. The cabrito can be bought on the range, at markets or butcher shops and is served in many hotels and cafes.

All of the boned goat meat is used in the manufacture of processed meats such as frankfurters, bologna and breakfast sausage. The meat is dry, lean and absorbs more water than other meats and is, therefore, well suited for processed meats. Boned goat meat is not used alone but is mixed with pork, beef or mutton. Each sausage maker has his own formula. As a rule, not over 25 percent of the sausage is goat meat.

If goat meat has been used in preparing the consumer's product, it must be listed on the label. Markets for boned goat meat are largely in the San Antonio vicinity, in other parts of Texas and in the northeastern and western parts of the United States.

The heart, liver and lungs of a grown goat are called the "pluck" and the heart, liver and lungs of the cabrito are called "a set of haslets." The "plucks" are used in making dog food and "the set of haslets" usually are sold with the cabrito.

The viscera is ripped and washed by the packing plant before it is sold with the bones, horns and hoofs to fertilizer manufacturers or rendering plants. Goat pelts are used in all types of leather products such as boot linings, billfolds, gloves, hand bags and belts. Some of the large pelts are sent to Mexico where they are used as heads on snare drums. Goat pelts are much stronger than sheep pelts and the Spanish goat has a sturdier pelt than the Angora.

If proper facilities are available, the pelts are cleaned, washed and stored in a salt brine solution. If these facilities are not available, the pelts are sold to hide companies.

Although the packer is not concerned with the hair on the goats, it is listed as a by-product and has proved to be of some value to him. If the goats are in hair, they are clipped before slaughter and the mohair is sold.

Other by-products include rennets, tripe, cheeks and tongues. The tripe, the first and second divisions of the stomach, is an edible offal and is used as a food. The cheek and tongue are used in barbecue. Most of these by-products are sold in the San Antonio area and South Texas near the border of Mexico. The rennets formerly were used in making commercial cheese but the process is now done with synthetics and rennets now have no value.

### New Markets for Goat Meat

A small percentage of the goat meat is exported to countries south of the United States.

The movement is still in the beginning stage, but larger markets may be developed for the meat.

The demand is for a goat carcass that is a little heavier than cabrito, but lighter than a mature goat, and must be young, healthy and in fair flesh. The meat is always sold as a carcass rather than as boned goat meat, and is shipped after it has been frozen at the packing plant. At the present time, the demand for this type of goat is greater than the supply.

Although cabrito has been served in many hotels and cafes for the past 10 to 15 years, it still is a relatively new use of goat meat. Most of the eating establishments that serve cabrito are located in the San Antonio area and near the border of Mexico. Because of lack of acquaintance with and prejudice against goat meat, very few menus in other parts of Texas and in other states list cabrito. The cabrito is a tasty meat and is liked by most people who have eaten it. Goat meat in general might soon be recognized by the public as a palatable meat, if a start were made by introducing cabrito on the menus of more leading hotels and cafes. Public acceptance, plus the good taste of a properly prepared dish, might create an increased demand.

The major limiting factor in the introduction of cabrito on cafe menus is the inadequate supply

of young goats. However, an increase in demand might cause more farmers and ranchmen to market cabritos instead of older goats.

### EFFECT OF PRICES ON SUPPLY AND DEMAND

From the beginning of goat production in the United States, the total population of goats has been small as compared with other types of livestock, and the market supply has been small.

More packing companies could use goats as a source of meat for processing if the supply was adequate. The only packers at this time who can make extensive and efficient use of goats are the ones located in San Antonio, where the supply of slaughter goats is concentrated. The demand of these few packers and butchers does not affect the market prices of goats in the same way as would a broader demand situation. An increase in the supply could induce more buyers for slaughter goats and the use of goat meat might increase.

The greatest volume of salable receipts in Union Stock Yards San Antonio was in 1947, 1948 and 1949, and there was an increase in prices of goats during this same period (Figure 9). Prices continued to increase during the next

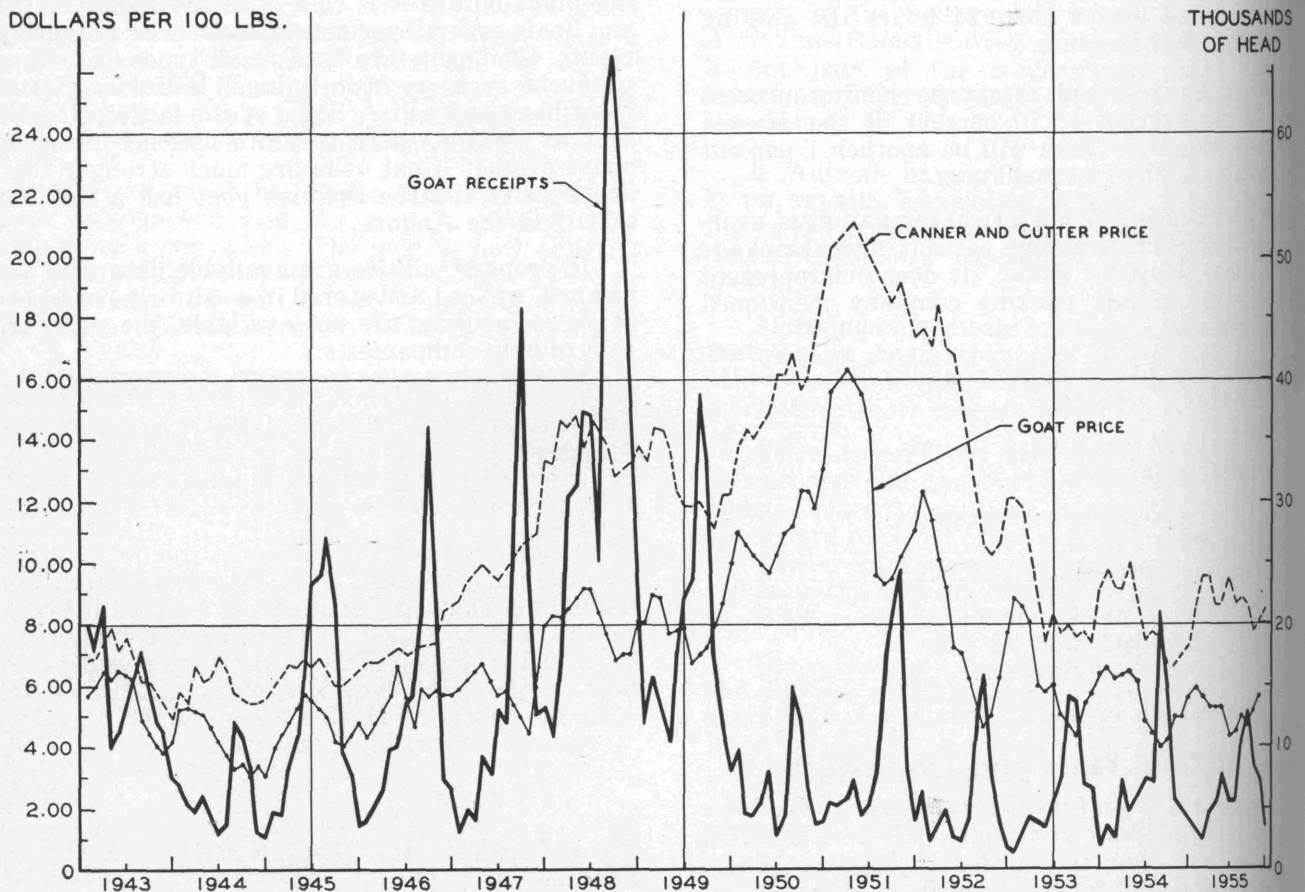


Figure 9. Receipts of salable goats and average monthly prices of short goats and Canner and Cutter cows, Union Stock Yards—San Antonio 1943-55. From Market News Branch, U. S. Department of Agriculture, San Antonio.

3 years, but the supply of goats dropped considerably. In 1951, there were 2,233,000 goats in Texas, yet the high goat prices did not influence the producers to market any more of their goats. To the producers, the goats on the range were apparently worth more for brush and weed control and mohair production than at the market.

The increase in receipts of goats in San Antonio from 1947 to 1949 was caused by a combination of factors. The average annual price of mohair dropped to 54, 46 and 47 cents, respectively during these years. Prior to 1947, the ranges were overstocked. The falling price of mohair and many overstocked ranges, plus a corresponding favorable market price for goats, caused producers to ship many of their goats to market.

The demand of farmers and ranchmen for stocker goats is not affected greatly by the price of goats. When they need goats on their ranges to have a well balanced livestock program they usually will buy the quantity needed without respect to price. Many contracts for goats a year ahead. Most of the contracts are verbal and usually are for the next year's kid crop, a stated number of goats that will be 2 year olds, and so on, but the price usually is not determined until the goats are transferred.

The prices of cabrito goats remain relatively stable from year to year and usually are \$3.00 to \$5.00 per head. Only in 1950, 1951 and 1952 when all goat prices were high, did the average monthly prices of cabritos go over \$5.00 a head. The fluctuations of supply and demand have not affected the price of cabrito goats.

Packers in San Antonio who buy goats, base their purchases more on the spread of prices between goats and canner and cutter cows than on goat prices alone. The high degree of correlation between the prices of goats and prices of canner and cutter cows is shown in Figure 9. Shorn goat prices were used so that the value of mohair on the goats would not affect the price comparison.

Prices paid for low grade cows in the past 10 years have been above the prices paid for goats, but the spread between the two prices varies. As the spread increases, some packers increase their purchases of goats. Their uses for boned cow meat are similar to those for boned goat meat, and packers can substitute one for the other.

## FUTURE OF GOAT PRODUCTION

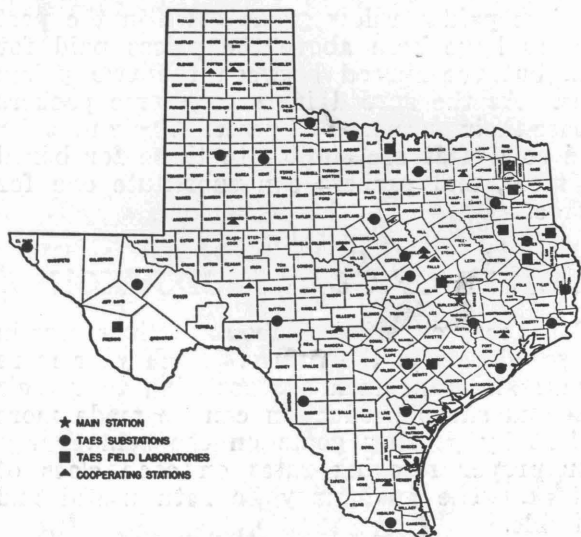
Texas may experience substantial increases in goat population in the future. Each year more farmers and ranchmen are realizing that their cattle and sheep production can be made more efficient by grazing goats on the same range under proper stocking rates on each class of livestock. The goats may be both useful and profitable.

The movements of goats from the Edwards Plateau to the West Cross Timbers has increased the goat-producing area of the State. When drouth conditions are alleviated, goats can be produced economically in both sections and goat population will increase.

The trend in fabrics seems to be towards combining high quality natural fibers with certain synthetics. The result has been an improved price for mohair.

The number of markets and warehouses in the goat-producing areas of Texas has increased, and in 1955 farmers and ranchmen had near-by markets for both their goats and mohair. Producers are benefited by the constant improvement of services rendered from stockyards, livestock auctions and wool and mohair warehouses.

Soil conservation and range improvement have been some of the policies of governmental agencies. By destroying the undesirable growth, goats tend to fit into these governmental programs.



Location of field research units in Texas maintained by the Texas Agricultural Experiment Station and cooperating agencies

## State-wide Research



The Texas Agricultural Experiment Station is the public agricultural research agency of the State of Texas, and is one of nine parts of the Texas A&M College System

**I**N THE MAIN STATION, with headquarters at College Station, are 16 subject-matter departments, 2 service departments, 3 regulatory services and the administrative staff. Located out in the major agricultural areas of Texas are 21 substations and 9 field laboratories. In addition, there are 14 cooperating stations owned by other agencies. Cooperating agencies include the Texas Forest Service, Game and Fish Commission of Texas, Texas Prison System, U. S. Department of Agriculture, University of Texas, Texas Technological College and the King Ranch. Some experiments are conducted on farms and ranches and in rural homes.

**R**ESearch BY THE TEXAS STATION is organized by programs and projects. A program of research represents a coordinated effort to solve the many problems relating to a common objective or situation. A research project represents the procedures for attacking a specific problem within a program.

**T**HE TEXAS STATION is conducting about 350 active research projects, grouped in 25 programs which include all phases of agriculture in Texas. Among these are: conservation and improvement of soil; conservation and use of water in agriculture; grasses and legumes for pastures, ranges, hay, conservation and improvement of soils; grain crops; cotton and other fiber crops; vegetable crops; citrus and other subtropical fruits; fruits and nuts; oil seed crops—other than cotton; ornamental plants—including turf; brush and weeds; insects; plant diseases; beef cattle; dairy cattle; sheep and goats; swine; chickens and turkeys; animal diseases and parasites; fish and game on farms and ranches; farm and ranch engineering; farm and ranch business; marketing agricultural products; rural home economics; and rural agricultural economics. Two additional programs are maintenance and upkeep, and central services.

**R**ESearch RESULTS are carried to Texas farm and ranch owners and homemakers by specialists and county agents of the Texas Agricultural Extension Service.