

The History Behind the Herd: Oklahoma State Purebred Beef Center

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Honors Thesis

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Introduction

The Oklahoma State University Purebred Beef Center produces genetically superior, high quality seedstock through the most advanced operation of any land grant university. This beef cattle operation is a unique experience in which the OSU Department of Animal and Food Sciences offers animal science students the opportunity to gain hands-on experience by working at the ranch. The continuous success of the purebred beef center has created a national reputation of excellence when it comes to the quality of alumni and current students from the animal and food science department at Oklahoma State.

The OSU Purebred Beef Center runs around 300 mature cows ranging across five different breeds. These five breeds include: Angus, Hereford (horned and polled), Brangus, Limousin, and Simmental. When the center was first established in the 1920's, the original herd consisted of only Angus and Hereford cattle. The herds have since expanded to include the other three breeds and are ran and maintained at one of two locations. The first location is the Purebred Beef Cattle Center: 160 acres three miles west of Stillwater on State highway 51. The alternative location for these cows is the "purebred range": 1,400 acres of native grass and 350 acres of Old World Bluestem improved pasture north of Lake Carl Blackwell. These five breeds of functional, high-performance cattle come from historical backgrounds that make them what they are today.

Angus

The origin of the Angus breed lies within Scotland. The northeastern part of Scotland consists of four counties: Aberdeen, Banff, Kincardine, and Angus. In the United Kingdom, there are three distinct and well-defined breeds of polled cattle. These three breeds are the Aberdeen-Angus, the Galloway, and the red polled Norfolk/Suffolk breed. Little is known about the early origin of the Aberdeen-Angus cattle; however, it is thought that the improvement of the original breed started in the latter half of the 18th century. The cattle that were first found in Scotland were not uniform in color, with many of the herd having broken color patterns or various markings. Some of the cattle were horned, while most of them were polled. When cattle were polled, they were often referred to as “humble,”

“doddies,” “humlies,” or “homyl” according to old Scottish writings. The Aberdeen-Angus breed of cattle was primarily composed of two strains. The first was found in the county of Angus, known as



Angus doddies. The second strain were called Buchan humlies and they were found in the area of Aberdeenshire. These cattle were commonly used as work oxen in their respective areas.

As time went on and farming practices improved, ranchers desired to improve their livestock as well. Prior to the middle of the 18th century, little attention was prioritized to breeding cattle. However, in the second half of the 18th century, Scottish agriculture made significant progress. In order for ranchers to do this, they began to purchase cattle from surrounding areas that were similar to their current herds. As a result of this, the Angus doddie strain and the Buchan humlie strain were continuously crossed. The crossing and recrossing of these two strains are what eventually led to distinct breed that closely resembled both

corresponding strains. By the beginning of the 19th century, the polled cattle of the Buchan district had attained considerable favor as market cattle. Cattle known as the Messrs were polled herds in the Aberdeenshire area famous for their production levels in the early 19th century.

If there is one person that could be identified as the founder of this breed of livestock, it would be Hugh Watson. Watson lived in Strathmore, which lied within Angus. He was the most successful and progressive person to improve the Aberdeen-Angus cattle. His father and his father before him had both been buyers of the Angus doddies. The family was known to have run cattle as early as 1735. When Watson began his own herd at Keillor, he received six of the best performing black cows and one bull. He then visited multiple leading Scottish cattle markets and purchased the ten best heifers and another bull to add to his herd. With these new additions, Watson was specifically searching for the cattle that showed significant characteristics of the Angus breed. While his new females were various colors, his new bull was black. Watson decided that the breeding objective for his new herd should be geared towards selecting for black hided cattle. Watson's favorite bull was known as "Old Jock 126" and was awarded first in the Herd Book at the time it was founded. Watson bred this bull in 1842 and continued to heavily incorporate this bull into his breeding system up until 1852. "Old Jock 126" was awarded the sweepstakes for bulls at the Highland Society Show at Perth in 1852; he was 11 years old at the time. The cow known to have made considerable history in the herd was known as "Old Granny 125." This cow was calved in 1824 and tragically killed by a lightning strike when she was 35 years old, in 1859. It is in records that "Old Granny 125" had 29 calves total, with 11 of them registered in the Herd Book. A significant amount of our current living Aberdeen-Angus cattle trace back to one of, if not both, Old Granny and Old Jock. These animals will even be seen multiple times on current day pedigrees if they are extended back to the first foundation.

Other early contributors to the breed would include Lord Panmure, William Fullerton, and Robert Walker. Panmure established a herd of polled cattle in 1835 through a private herd while encouraging his tenants to breed well established doddies. Fullerton began to breed cattle in 1833. “Black Meg 43 (766)” was one of Fullerton’s most important purchases, an Aberdeen cow. Black Meg is often referred to as the founder of the breed, considering there are more cattle that trace back to her than any other female used in the origin of the breed. Black Meg is the only cow to surpass Old Granny in this respect. Walker founded his herd in 1818 and continued to have successful seasons until his death in 1874.

However, the Aberdeen-Angus breed did experience a slight threat from the Shorthorn breed. In 1810, the Colling brothers of England sold “Comet,” the famous Shorthorn bull, for \$5,000. The publicity that resulted from this impressive sale spread all throughout Scotland, causing many breeders to desire the use of Shorthorn cattle to improve the native herds. The use of the Shorthorn cattle on the black native cows became increasingly common in the commercial cattle industry. This increased to the point that the Aberdeen-Angus breed became threatened with extinction. Fortunately, the growth of the Aberdeen-Angus breed did not stop there. Historians believe the Aberdeen-Angus history is almost evenly divided into two periods: before William McCombie’s time, and then since then. McCombie lived in Tillyfour and is known as the preserver and great improver of the Aberdeen-Angus breed. McCombie always kept utility in mind when producing his cattle. He desired his cattle to have size, symmetry, and balance, yet with strength and disposition.

Another well-known Aberdeen-Angus herd in Scotland belonged to Ballindalloch family. This herd was kept in the family for over three generations. It was first founded by Sir John MacPherson Grant, but it wasn’t until the herd landing in the hands of his son, Sir George, that

systematic breeding began. Sir George drew heavily on Tillyfour cattle when establishing his herd. The Ballindalloch herd was not only outstanding in Scotland, but also furnished a great deal of very valuable foundation stock to the Aberdeen-Angus herds that traveled to the United States and other foreign countries.

The first Angus cattle arrived in the United States in 1873. Sir George Grant transported four Angus bulls from Scotland to the middle of the Kansas prairie in 1873. These four bulls made a lasting impression on the U.S. cattle industry even after the passing of Sir George. Two of these bulls were exhibited in the fall of 1873 at the Kansas City Missouri Livestock Exposition, where they were considered “freaks” because of their polled heads and solid black color, compared to the dominant breed at the time: Shorthorns. Sir George had crossed the bulls with native Texas Longhorn cows, producing a large number of polled black calves that produced well on the winter range. The Angus crosses wintered better and weighed more the next spring, giving a large advantage of the breed’s value in the United States.

The first successful herds of Angus beef cattle in America were built entirely by purchasing stock directly from Scotland. There were over twelve hundred cattle imported, mostly to the Midwest, in a period of explosive growth between 1878 and 1883. The success of the breed was undeniably shown when the American Aberdeen-Angus Breeders’ Association, which was later shortened to the American Angus Association, was founded in Chicago, Illinois, on November 21, 1883. Over the following quarter of a century, these early owners helped start other herds by breeding, showing, and selling their registered Angus stock. Modern day Angus are known for being resistant to harsh weather, easily adaptable, undemanding, well natured, early maturing and finish out with high carcass yields with good marbling. The breed is used

widely in crossbreeding to improve carcass quality and production traits. Thus explaining why the Angus breed is known nationwide for their well-rounded qualities.

Hereford

The origin of the Hereford cattle breed is found near Hereford in the County of Herefordshire, England. The breed was founded around two and a half centuries ago due to the necessity of their traits. The farmers were determined to produce beef for the expanding food market, resulting from Britain's industrial revolution. In order to succeed in Herefordshire, these past-day cattlemen realized they must have cattle that were capable of impressive feed conversion, to utilize their native grass, resulting in good quality beef while obtaining a profit. At that time, not a single other breed existed that could fill those needs. These early Hereford breeders molded their cattle with the desire to produce a high yield of beef and efficiency of production. These characteristics were not only obtained then but were fixed to the point that they still remain today as distinguishing characteristics of the modern-day Hereford.

The man credited with founding the Hereford breed is Benjamin Tomkins. Tomkins inherited a bull calf and two cows from his father's herd in 1742. The bull was a calf out of a cow named "Silver," and the two cows were known as "Pidgeon" and "Mottle." This took place 18 years prior to the development of Robert Bakewell's theories of animal breeding. From the beginning, Tomkins had multiple traits of economic importance in mind when developing his herd. These traits included feed efficiency, natural feed conversion, hardiness, and early maturation; all being traits that are still of heavy importance today. Other breeders looking for successful expansion quickly followed Tomkins' lead, causing the Hereford breed of cattle to grow far beyond England.

Herefords came to the United States in 1817 when the great statesman Henry Clay of Kentucky made the first import containing a bull and two cows. These three, along with their

offspring, attracted great attention, but they were eventually absorbed by the local cattle population and disappeared from permanent identity.



provided by Dr. Robert Kropp

The first Hereford herd to be bred in America was established in 1840 by William H. Sotham and Erastus Corning of Albany, New York. The more densely populated eastern area of the United States was the early home of Herefords. The breed then expanded out to the South and West as

population moved as well, increasing the demand for beef. The Hereford cattle were known to be tough and were bred to survive and thrive in less than adequate conditions. This is when the Hereford breed proved themselves to be durable and obtained the nickname “the great improver.” This caused the American Hereford industry to boom and pass a great milestone on June 22, 1881. On this day, a few breeders met in Chicago at the Grand Pacific Hotel where they laid the foundation for the organization of the American Hereford Association. This association had the two-fold purpose of keeping the breed’s records and promoting the interests of Hereford breeders. For longer than a century, the American Hereford Association has performed their duties with little change to the original bylaws.

One of the most desirable traits that belong to the Hereford cattle at the time was their capability of early maturation. In order to get this, breeders in the late 1930’s and 1940’s bred for the compact type of conformation. This meant that their preferred breeding stock were short, low set, wide, and deep-bodied cattle that were naturally smaller. The market changes that surfaced in the 1960s were quite the opposite of this, causing the current Hereford cattle to be penalized in price and discriminated against at sale barns. The new preferred type of cattle were leaner, with

less fat and more red meat. This market shift was first spoke about in the Hereford industry at the National Hereford Conference in Denver in 1963, again in 1967 at a conference in Kansas City, and in the now famous 1969 conference in Wisconsin. The cost of production at the time required cattle that would have a faster daily gain at a lower cost. These requirements translated to cattle that had more size and a different kind of conformation. The Hereford breeders were dedicated to this new kind of cattle, and they accomplished their objective in a remarkably short time. The broad genetic base of the breed and the ability of the breeders to utilize modern technology along with practical applications aid in the wonder of the breed.

In 1963, the American Hereford Association embarked on an experimental program to be able to test their sires under practical feedlot conditions. The original program was then replaced by the National Reference Sire program, which is what is used still to this day. This program led the way for all breeds in sire testing by providing the opportunity to identify superior sires. The beginning of the AHA's record keeping was then expanded to include performance records and was followed by the establishment of the present-day Total Performance Records (TPR) in 1964. There are currently more than two million records of performance on file on the AHA computer, stored for use in assisting selection for improvements in future cattle generations.

The late 1960's uncovered the overwhelming evidence that the Hereford breed had too many cattle that did not measure up to the performance level that was desired. Hereford followers sought out breeders and bloodlines noted for cattle of substantial size and performance. Breeders found their growth traits fairly easy to select for as the breed had an ample and broad genetic base to select from, in order to result in larger framed cattle. Although selection was easy, it wasn't a quick process. Due to this, many breeders began searching for short cuts. They decided to search the country for sires with more frame and size, curious in what their weaning

and yearling weights consistently show. As growth became more and more prominent as the major important trait for performance, it was often ignored or forgotten that the most economically important trait in the beef cattle industry is fertility. Breeders would often select for frame score and mature weight, while, along with fertility, structural soundness, feet, and legs were ignored. The utilization of performance records being completely accepted worldwide has been a slow process. Even in modern day situations, it is not always appealed to. Different breeders will continue to put their own emphasis on different aspects of their breeding systems. Due to substantially different opinions in the past, present, and likely future, Hereford cattle will continue to command the premier spot in the beef cattle industry for years to come.

Brangus

The breed that became known as Brangus was developed to capitalize off of the superior traits of Angus and Brahman cattle. The combinations' genetics are kept at 5/8 Angus and 3/8 Brahman. This cross results in a breed that not only has extremely successful parental characteristics coming from both sides but breed specific characteristics as well. From the Brahman side, there is developed disease resistance, overall hardiness, and outstanding maternal instincts. Coming from the Angus side, there is superior carcass qualities and extremely functional females that consistently excel in both fertility and milk production.

The registered Brangus descend from the foundation of cattle recorded as registered Brahman and Angus enrolled since 1949. It was that year when the American Brangus Breeders Association was founded. A significant amount of the early crossings took place at the USDA Experiment Station located in Jeanerette, Louisiana. According to the USDA 1935 Yearbook in Agriculture, the research involving these crosses started around 1932. However, during that same period there were other individual experiments being ran. Clear Creek Ranch of Welch, Oklahoma, Clear Creek Ranch of Grenada, Mississippi, Raymond Pope of Vinita, Oklahoma, Essar Ranch of San Antonio, Texas, along with a few other individual breeders in other parts of the United States and Canada were running their own private breeding programs. These ranches were looking for a desirable beef-type animal that would retain the Brahman's natural ability to thrive under adverse conditions in combination with the excellent qualities for which Angus are known for.

On July 2, 1949, the early breeders from 16 different states and Canada met in Vinita, Oklahoma and organized the American Brangus Breeders Association. It later was renamed to the International Brangus Breeders Association (IBBA). Their headquarters were first located in

Kansas City, Missouri and eventually in San Antonio, Texas, which is where their current permanent headquarters are and has been since January of 1973. Present day members include people from nearly every state, Canada, Mexico, Australia, Central America, Argentina, and South Rhodesia in Africa. In order for a Brangus cross to become registered with IBBA, they must be 3/8 Brahman and 5/8 Angus, solid black, and polled. Their sire and dam both are required to be recorded and enrolled with the IBBA and they must each be registered in their respective breed association prior to being enrolled. In recent years, the majority of the registered Brangus cattle are from Brangus parents. However, there is an increasing amount of foundation Brahman and Angus being enrolled as the breed achieves greater recognition. The increasing interest in these crosses that carry a certain percentage of Brahman cattle speaks well for the claimed advantages that *Bos indicus* cattle are said to have in areas of high heat and humidity. Research that took place in Louisiana has indicated that Brangus cows increased their weights during the summer months while Angus cows lost weight,



indicating that they were more adapted to the costal climates. Further research shows brangus calves were heavier at birth and weaning, therefore producing more total pounds per cow. The Angus had an advantage in pregnancy percentages and calved earlier, and the calves were more vigorous at birth and survived better to weaning.

The up-and-coming breed has proven resistant to heat and high humidity, while still producing enough hair for adequate protection under conditions of cool and cold climates. The cows are good mothers, and the calves are typically of a medium size when born. They respond

well to conditions of abundant feed but have also exhibited hardiness under stressful conditions. The Brangus cattle are becoming more and more popular, for easily understandable reasons and will likely continue to grow in popularity.

Limousin

The golden-red cattle known as the Limousin breed are native to the south-central part of France, in the regions of Limousin and Marche. They have been known to be around for as long as the country itself has. The terrain of this area is characteristically rugged and rolling with rocky soil and a harsh climate. Due to this, it was difficult to grow crops in these areas. Since crops were not an option, animal agriculture became the primary focus. As a result of their environment, Limousin cattle became a breed that was known for their unique and unusual sturdiness, good health, and impressive adaptability. During the early times of the Limousin breed, the cattle were well known as working animals in addition to their beef qualities. The cattle would be raised into work, and once their working life was completed, they were fed more and killed for meat.

While other French cattle of this time were confined and protected from the harsh conditions, Limousin cattle were exposed to the climate and had to adapt to their surroundings. The cows were known to calve year-round in order to bring in a regular source of income. Regardless of the season, the cattle were maintained outside and handled on a daily basis. The first attempt at improving the Limousin breed was made in the early 1700's and then again in the mid-1800's. French Limousin breeders desired to gain both size and scale in their herds and attempted to achieve this by crossing their Limousin with a variety of oxen of Agenaise. The offspring from this cross resulted in cattle that were taller and that had an increased amount of muscle in their hindquarter. Both of these attempts at improvement ended up being unsuccessful as these new crosses required a higher amount of feed, resulting in economical situations that were not attainable.

Limousin breeders came to the realization of their mistakes and decided to try a different approach to improve their breed. They decided to put their concentration upon improving Limousin cattle through natural selection. Charles de Leobary and his herdsman, Royer, became known as the leaders of the natural selection movement. These two men developed an outstanding herd of purebred Limousin through this movement. Between the years of 1854 and 1896, Leobary's herd won a total of 265 awards at the Bordeaux Competition, which is one of the most prestigious cattle shows held in France. During the 1850's, the Limousin cattle made a long-lasting impression in the French cattle shows. Following, in 1857, 1858, and 1859, the Limousin cattle were excelling far over their competitors in carcass competitions and at the farm produce competition held at Poissy. The name of the Limousin breed at meat animals was officially becoming established. In current-day France, Limousin are still referred to as the "butcher's animal."

After realizing how important natural selection had become to the breed, and how much emphasis lies upon bloodlines themselves, the first Limousin Herd Book was established in November of 1886. The herd book was presided by Louis Michel, with his primary goal being to ensure the uniformity and integrity of the Limousin breed. When making selections, Michel and his 11 herd book commissioners were extremely particular. In the three years between 1887 and 1890, Michel and his commissioners met six times total and only accepted 674 animals for registration: 117 males and 497 females. These animals were chosen out of 1,800 animals total, coming from 150 different ranches.

Once the Limousin Herd Book was established, the French government put together shows that were only open to registered Limousin cattle. These shows resulted in beneficial exposure of the valuable traits these cattle obtained. Registered Limousin cattle numbers

continued to increase and by July of 1914, there was a total of 5,416 animals in the herd book. However, the herd book has been reorganized twice since it was founded, once in 1923 and again in 1937. The reorganizations were implemented to redefine the characteristics of the breed, causing breeders to be more selective and in turn resulting in the improvement of quality in Limousin herds.



Provided by Cameron Olson

As the breed continued to develop further, breeders paid attentive thought to morphological characteristics through the late 1800's and early 1900's. In comparison to other European breeds, the medium size of cattle was an outstanding trait. The French records show emphasis on selection for deep

chested cattle with a strong top-line, well-placed tailhead, strongly muscled hindquarter, and dark golden-red hide with wheat-colored underpinnings. These selections resulted in efficient, hardy, easily adaptable animals that were extremely well-suited to produce meat.

While the breed had only been developed in France, cattlemen in North America were looking to Europe to improve their beef cattle in the United States. In the late 1800's, English breeds such as the Hereford, Shorthorn, and Angus were imported into the United States and crossed with native cattle. In the early 1900's, Charolais were imported into Cuba and Mexico, then first introduced into the United States in the early 1930's. Once the cattlemen in the United States realized they liked the success of breeds like Charolais, they continued their search into European breeds, which is when they found the Limousin breed. In the early 1960's they had their first exposures in the United States, when a Canadian wrote about his experiences with the

breed in an issue of the Western Livestock Journal. American cattlemen had to see for themselves, and after traveling to Europe, they would come back to talk about an impressive “new” beef breed that they had seen: the Limousin.

However, at the time cattle being imported from France was not allowed. France was known for being a hoof-and-mouth disease affected area. Eventually, the Canadian government agreed to accept French cattle after they had successfully completed a strict quarantine program. After passing their quarantine program, semen could be shipped to and throughout North America. The first Limousin imported to Canada was Prince Pompadour, a son of Baron bred at the Pompadour Estate of France, a highly respected program. Through the efforts of many cattlemen, the bull arrived in November of 1968. After his arrival, Prince Pompadour was brought to the United States to be part of Limousin exhibitions at various cattle shows, drawing significance attention to the Limousin breed. The first Limousin bulls that were imported into the United States for good didn't arrive until the fall of 1971. Until this time, the Canadian government had not permitted any Limousin bulls to leave except for short periods of time for the use of exhibitions. The first American import, an animal known as Kansas Colonel, was born and raised in Canada before Bob Haag of Topeka, Kansas imported him for a group of Kansas Limousin breeders.

As Limousin cattle continued to arrive in North America, the cattlemen realized they needed an organization for the breed that would benefit their herds in the United States and Canada. In the December of 1968, fifteen cattlemen formed the North American Limousin Foundation (NALF) at the Albany Hotel in Denver. Bob Purdy of Buffalo, Wyoming was the first president of NALF, where he served as the president for three years. The first executive vice president, Dick Goff of Denver, was the man responsible for actually running the foundation. As

a result, Goff was responsible for the finances behind NALF. He decided to charge membership fees, resulting in earning \$2,500 per member for the first 100 founders. This decision gave the Limousin breed a great start in the United States. The initial concentrations began in Oklahoma, Texas, South Dakota, and western Canada. After other cattlemen witnessed their success, the Limousin breed expanded across the entirety of North America. The beef industry as a whole was attracted to the breed due to their impressive carcass traits.

The North American Limousin Foundation has now grown from the first 99 founders, to close to 12,000 active lifetime members that have currently registered over 1 million head of Limousin cattle. The breed has been the most progressive cattle registry in the U.S., as the leader in Muscle Growth Efficiency and being an impressive complement to British-based cows. From the Limousin's first beginnings in France centuries ago, to now, these golden-red beef cattle have achieved far more acceptance in the United States due to being a top competitor and major contributor to the beef industry.

Simmental

The Simmental cattle breed is one of the oldest and most widely utilized breeds in the entire world. The first recorded herd book was established in the Swiss Canton of Berne in 1806, yet there is significant evidence of large, productive red and white cattle recorded in much earlier records in western Switzerland. These cattle were highly desired because they grew rapidly, had good milk production, and they had good stature.

As early as 1785, the Swiss Parliament experienced a shortage of cattle and implemented an export limitation in order to meet their own needs. This caused the Swiss “Red and White Spotted Simmental Cattle Association” to be formed in 1890.



Provided by Beate Milerski

Although the breed originated in Switzerland, since then it has spread to all six continents. Worldwide, the total numbers of Simmental cattle are between 40 and 60 million head. Over half of these cattle are maintained in Europe. The spread began gradually until the late 1960's. During the 19th century, the breed was distributed through the majority of Eastern Europe, the Balkans, Russia, and finally spreading to South Africa in 1895. The first Simmental was imported into the Western Hemisphere in 1897, coming from Guatemala. Simmental were reported entering the United States, arriving in New Jersey as early as 1885, in Illinois in 1887, and in both New York and New Mexico between 1916 and 1920. However, these early imports did not blow away the American cattlemen, and the Simmental influence died off until the late 1960's.

The rise of the Simmental cattle in the United States occurred when a Canadian, Travers Smith, imported a bull from France in 1967: "Parisien." The use of Simmental was also introduced this same year, when the first Simmental cross calf was born in February of 1968. Shortly following, in October of 1968, the American Simmental Association was formed. The breed continued to expand its geographical horizon to Great Britain, Ireland, Norway, Sweden, and other north European countries in 1970 or close after. In 1971, the first purebred Simmental bull was imported into the United States. Following in 1972, Australia received Simmental semen and live animals. This encouraged another great milestone: the formation of the World Simmental Federation in 1974. The amazing growth of Simmental cattle in North America results in approximately 80,000 cattle registered yearly into the Simmental herd books. The association currently ranks in the top four of the United States' beef breed associations based off of annual registrations. The world-wide use of Simmental cattle has contributed greatly to the beef industry and does not seem to be ceasing anytime soon.

Conclusion

The Oklahoma State University Purebred Beef Center consistently excels in the cattle industry and is known for their high-quality herds. After understanding the background and upbringing of the cattle that the operation is comprised of, there is no wonder where their success is derived from. The five cattle breeds that are ran through this prestigious operation outshine their competitors in nearly every aspect. As time goes on, there is no doubt the beef center's accomplishments will proceed to grow and make a heightened reputation for each of the breeds: the Angus, Hereford, Brangus, Limousin, and Brangus cattle, as well as the operation as a whole.

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