



**A Guide to the Kansas
Elk & Deer Industry**
Animals, Markets & Benefits

**An Association of Elk and Deer Ranchers
Committed to the Development of their Herds
and the Cervid Industry in the State**



Kansas Cervid Breeders Association

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What is the Kansas Cervid Breeders Association?

The KCBA is the member association for all the elk and deer breeders in the state. In 1995, the KCBA was formed to represent the voice of cervid breeders at the state and national level. It connects its members with other breeders, markets, and news. The KCBA is guided by a five member board of directors. The KCBA works with Kansas state agencies and other livestock and cervid associations across North America.

What are cervids?

Cervids are all members of the deer family. This includes elk, moose, and all species of deer. Male elk and deer grow and shed antlers every year.

Why do people raise elk and deer?

Farmed elk and deer are viable industries in Kansas and dozens of states across the nation. Farmed elk and deer have been in Kansas since the 1980's. The KCBA has members that raise cervids for many purposes utilizing several markets and companionship.

Who regulates farmed elk and deer?

Farmed cervids are under the jurisdiction of the Kansas Department of Agriculture's Animal Health Division. This has been in effect since 1993 when the original domestic deer language passed the Legislature. (KSA 47-2101)

What kinds of elk and deer are raised in Kansas?

There are several different species of deer that are raised on cervid ranches in the state. Elk and Whitetail Deer are the most common cervids raised. Other common breeds of deer include Fallow Deer, Sika Deer and Red Deer.

How do you handle cervids?

Any person that has land to raise elk or deer may do so by constructing the correct type of facilities. Facilities must have 8' high-tensile wire fence used as perimeter fences due to the nature of their ability to jump. Gates and alleyways are commonly used to move animals. Elk and deer can be hauled to new places by an enclosed stock trailer.

How do you care for cervids?

Cervids are usually wormed two to four times a year. Elk and deer are fed corn, grain, or a deer pellet purchased at a local feed supply. All animals must have two forms of identification. Many animals have DNA matched to sire and dam.

Are elk and deer prone to disease?

- Elk and deer are a hearty livestock with a natural immunity to most diseases. Although they can contract normal bovine diseases, they are not prone to do so.
- Most breeders practice a vaccination program along with routine worming.
- Most herds are regularly tested and monitored for TB and Chronic Wasting Disease (CWD).
- CWD is a prion disease that affects members of the cervid family. CWD has never been proven to affect humans. Most cervid farms are involved in some type of monitoring program that ensures when a cervid dies it can be checked for CWD. In Kansas, CWD is very rare, with an infection rate of less than 0.002%.

ELK

Breeding Stock

- Elk are a single offspring species; twinning is rare.

Velvet

- Bulls produce velvet antler every year. An average 2-year-old will grow approximately 9 lbs. of velvet. Generally, bulls increase velvet yields every year until maturity. Mature bulls (7- to 8- years-old) may produce 30-40 lbs. of velvet.
- A herd with an even distribution from yearlings to mature bulls will average 15 lbs. per head.
- There is an expanding demand for velvet products in North America.
- This is a classic renewable resource.



Bulls

- Mature bulls average 800 to 1,100 pounds, stand 5' to 5'6" at the shoulder, and are 7 to 8 years of age.
- They are capable of breeding at two years of age.
- Top velvet producing bulls have large circumference beams and mass above the third tine.
- The antlers' number of points is influenced by genetics and feed, as well as by maturity.
- Antlers fall off in March and regrow every year.
- When harvested in May or June, 20 to 40 pounds of Grade A velvet should be the yield from a mature bull.
- They dress out at approximately 56% of live weight.

Cows

- Mature cows average 550 to 600 pounds, stand 4' to 5' at the shoulder, and are three to four years of age.
- Most 18-month-old females will cycle if they weigh at least 430 lbs.
- They do not grow antlers.
- They are very good mothers.

Calves

- They are born in May or June and spend the first week of their lives in tall grass, usually getting up only to nurse.
- They are spotted when born and develop their brown coats in six months.
- Through natural instinct, the cow watches the calf from a short distance, drawing near when it is threatened.

Breeding

- The rut, controlled by the day/night cycle, is from late August to late October.
- For best success, breeding bulls should be three years old or older.
- One bull can service 20 to 40 cows.
- A bull will gather a group of females and keep them away from other bulls.
- Bulls compete for dominance through bugling, sparring, and chasing would-be competitors away. (Injuries are rare.)
- Bulls and cows go through a ritual before the actual "high mount" of mating.
- A cow's gestation is approximately 246 days, + or - 10 days
- Artificial insemination is common, with a success rate of 50-80%.

Calving

- All cows will "bag up" before giving birth.
- The cow will start to "walk the fences" prior to calving, looking for a quiet, private place to give birth.
- Although calving problems are rare, farmers can help the cow by pulling the calf, but only after waiting a lengthy period for a natural birth.
- The cow will immediately accept the calf and clean it, and the calf will stand to nurse.

Whitetail Deer

General

The whitetail deer's long white tail, raised erect when alarmed, is its most distinctive feature. Its metatarsal gland below the hock on the outside of the hind leg is one inch long, which is somewhat shorter than its cousins the mule deer and the blacktail deer.

Whitetail fawns are spotted at birth. As adults, their color varies from a summer reddish-brown to a winter gray. An adult whitetail buck can weigh anywhere from 200-400 pounds, depending on the area of North America.

Nutrition/Health

Whitetails are browsers, therefore they may be maintained on marginal land unsuitable for cattle, sheep and horses. They require little more than natural cover, browse, graze and nutritional supplements along with adequate water supply. Minerals and proteins are important in the deer diet; soil sampling and pasture management are fundamental tools for deer management. If the pasture does not supply enough nutrients, the farmer should supplement feed with trace minerals if needed.

Whitetail deer need hay, grain, vitamins and minerals during the winter to meet nutritional requirements. Supplemental feeding is also necessary during hot weather when pastures are growing slowly and during late summer in preparation for the rut.

Whitetail deer are hardy animals, but are vulnerable to diseases that afflict other cervids. They are also susceptible to Epizootic Hemorrhagic Disease, Bluetongue and Anaplasmosis. Sheep should not be raised side by side with whitetail deer as they are carriers of Bluetongue.

Reproduction

Whitetail deer follow the patterns of their cervid counterparts in reproduction stages. Unlike red and fallow deer though, twins are a regularity. They have seasonal synchronization of birth, body growth, activity cycles and growth stasis corresponding to feed quantity, quality and availability. For example, maximum nutritional demands for females occurs during lactation. The precise timing of breeding and birthing ensures that maximal lactational demands coincide with the most lush and plentiful growth of forage (May, June and July).

Summer is the time of fawning and lactation, and the time of maximum weight gain for the yearlings. For the mature bucks, it is the time for antler growth and regaining of body condition and fat reserves depleted during the previous autumn rut and winter.

Whitetail does have been known to live up to twenty years, producing fawns almost every year after two years of age. Does can be bred at one and a half years of age and up. The average productive life of a doe is ten years. The current production practice is to replace bucks after five years of breeding. The ratio of buck to breeding does should be one to ten.

Some whitetail breeders are currently using cutting edge technology such as artificial insemination, in-vitro fertilization, and selective breeding in their breeding program. This is also an excellent opportunity to learn new techniques such as chemical immobilization of deer, handling and transport. From a commercial standpoint, the whitetail segment of the deer industry is still in its early stages with potential for successful business ventures in all aspects, large or small.



Fallow Deer

History

Fallow deer are one of the popular exotic species raised in North America. Their domesticated history extends back to the 9th century B.C., when the Phoenicians domesticated them for quality venison.

For centuries, the Europeans raised them for food, and today fallow deer continue to yield fine table venison. Their recent farming history can be traced to German farmers who sought an alternative and more profitable land use. Josef Kerckerinck, NADeFA's founder, was the first to farm fallow deer commercially for venison in North America. He established his farm in New York in 1979, and fallow deer farming quickly spread throughout the Northeast, and today all throughout North America.



General

The most distinctive feature of the fallow deer is the male's antlers. Broad, flat, palmated antlers grace each buck's head. They resemble a hand with widespread fingers pointing backwards.

The coloring of fallow deer varies between white and black, following four main patterns: white, menil (a light brown coat with bright white spots), common or ginger (rich brown with white speckles on their back and flanks, and a black stripe), and black.

Fallow deer are comprised of two subspecies: Mesopotamian and European. The most obvious differences between the two are body size and antler shape. The Mesopotamian fallow deer are larger than their European companions, and their antlers spread out at the base, while the European fallow have their palmation near the top.

Nutrition/Health

Fallow deer harbor a natural resistance to disease and parasites, including yersiniosis, lung worm, and chronic wasting disease. They also are not very susceptible to copper deficiency. It is nonetheless very important to check the health status and the history of the deer before they are bought. Efficient converters of forage to meat, fallow deer are grazers consuming an unusually wide range of grasses, legumes, and broadleaf weeds.

They thrive on any pasture that would support cattle, sheep, goats, horses, antelope, and camelids. In New Zealand it is not unusual to see fallow deer grazing among other species as a means of weed control.

Reproduction

Fallow deer follow the patterns of their cervid counterparts in reproduction stages; however they do not cross with any other species and they rarely birth twins.

Fallow deer have seasonal synchronization of birth, body growth, activity cycles and growth stasis corresponding to feed quantity, quality and availability. For example, maximum nutritional demands for females occurs during lactation.

Gestation for fallow deer averages 234 days plus or minus 6 days. The precise timing of breeding and birthing ensures that maximal lactational demands coincide with the most lush and plentiful growth of forage (May, June, and July in the northern hemisphere).

The summer is the time for fawning and lactation, and the time of maximum weight gain for yearlings.

For mature bucks, it is the time for antler growth and regaining of body condition and fat reserves which were depleted during the previous autumn rut and winter.

The ratio of breeding bucks to does should conservatively be one to twenty. On the average, does fawns until they are about fifteen years old.

Fallow deer herd structure determines their social organization: adult does, yearlings and fawns make up one herd, while adult bucks form smaller herds.

Sika Deer

History

Sika deer were initially found in southern Siberia and the Japanese island of Hokkaido in the north along both mainland and island chains to southwestern China and Taiwan. They were located by western zoologists in the middle of the 19th century, when they found many (more than 70) subspecies, especially in the Asian continent. The Chinese chemists bred and cross-bred sika for centuries and used virtually every part of the animal. In Japan, however, herds ran free throughout the country. Those in the north had large body and antler size, while those in the southern region were smaller. The first sika were introduced in America to Maryland in 1916, and into Texas in 1939.



General

Sika deer tend to range in color from mahogany to black. They are rarely white with very few documented cases of white as opposed to albino. All colors carry a distinctive black dorsal stripe from the base of the skull to the tail.

Most animals have some degree of spotting with the mahogany color generally carrying white spots and the darker colors having either white or black spots or black flecking.

When alarmed, they will often display a distinctive flared rump much like the American elk. All sika are compact and dainty-legged with short, trim, wedge-shaped head and a boisterous disposition.

Sika stags have stout, upright antlers with an extra buttress up from the brow tine and a very thick wall. A forward-facing intermediate tine breaks the line to the top, which is usually forked. Occasionally, sika develop some palmation.

Females carry a pair of distinctive black bumps on the forehead. Antler length can range from 11 to 19 inches to better than 30 inches depending on the species. Stags also sport a distinctive mane while in the rut. The average weight for an adult stag is 160-220 pounds.

Sika are study animals and seem to do well in the north as well as the hot, dry southwest. Sika deer have a calm disposition, however, they are prone to biting when put in a trying situation.

Nutrition/Health

Sika deer respond well to palletized feeds, corn, hay, and do well foraging on their own in a free range situation. However, water is extremely important and providing an area for wallowing and splashing is a must.

In the wild, sika prefer forest type vegetation and feed primarily at night. They are true ruminants and feed on plants, grasses, leaves, bark and off the ground. Like their red deer cousins, sika deer are susceptible to stress-related disease if poorly managed.

Reproduction

Sika deer have seasonal synchronization of birth, body, growth, activity cycles and growth stasis to correspond to feed quantity, quality and availability. For example, maximum nutritional demands for females occurs during lactation.

The precise timing of breeding and birthing insures that maximal lactational demands coincide with the most lush and plentiful growth of forage (May, June, and July). The summer is the time of fawning and lactation, and the time of maximum weight gain for the yearlings. For the mature stags, it is the time for antler growth and regaining of body condition and fat reserves which were depleted during the previous autumn rut and winter.

For sika deer, birthing usually occurs between May and August, with a gestation period from 222-262 days. Twinning is rare in sika deer.

The sika rut is often referred to as the "roar". The rut generally starts in middle to late September with hinds beginning to cooperate in early October to as late as December. Stags must be separated during the roar as they become intolerant of each other and will cause great harm to other nearby males. One stag will service 15-20 hinds.

Axis Deer



History

The axis deer can be traced to the foothills of the Indian Himalayas and island of Sri Lanka (Ceylon). Their original habitat was open country at lower elevations in forested regions. They have been introduced onto other continents and are a favorite of zoological gardens around the world. Free ranging populations exist in the continental United States, Hawaii, and Australia. Axis deer were introduced into Texas in 1932. Texas has by far the largest population of axis deer in the United States.

General

Axis deer have striking reddish-brown coats marked by white spots arranged in undisciplined rows along their sides. They have a black dorsal stripe and a white bib on their neck, white inner legs, stomach, and undertail.

Male heights range from 29 to 39.5 inches. Mature weight is from 145 pounds to 250 pounds. Males have darker facial markings with a more pronounced “scowling” expression the older they get. Female axis stand 26 to 33 inches and weigh from 90 to 150 pounds.

Axis bucks can be in hard horn any time of the year. They grow and shed antlers on their own clock so in one herd there may be a newly shed buck, a hard horn buck and a buck in velvet.

Usual antlers are 22 to 27 inches, with trophies ranging from 30 to 36 inches. Axis have a typical antler structure of three points on each side consisting of a main beam, one secondary point halfway up the beam, and a brow tine. However, four points are not uncommon.

During stressful times, good animal condition and heavy situational feeding have made the difference between high death loss and virtually none.

Axis deer appear incapable of putting on intra-muscular fat and are very efficient grazers. They produce lean meat with 0.2% fat or less, and therefore are legally “fat free.”

Nutrition/Health

The primary diet of axis deer is grass, and they will graze on new weeds and forbs. When grass is not in sufficient quantity, they may browse. Axis graze successfully on native Texas grasses such as curly-mesquite, Indian-grass, side oats grama, big and little bluestem. They do well on improved grasses, such as Klein. Seasonally, they do well on winter wheat. Browse species include live oak and hackberry. Mast includes acorns and mushrooms.

In a ranched situation, axis deer are disease resistant and do not require inoculations or worming.

Texas fleas and ticks appear to be species-specific and do not bother axis. Axis can get tuberculosis but cases are extremely rare and, in the only documented case found in axis deer, was present in a Hawaiian dairy cattle herd where axis fed.

Reproduction

Axis deer have a high fertility rate and can breed year round, usually based on their birth date. A primary harvester of excess animals in the Texas Hill Country reports that they have never harvested an axis female that was not pregnant, lactating or both.

Gestation is approximately 7.5 months (210-238 days). In Texas, fawning peaks in January-April and October-November. Researchers report that males in velvet antler can breed. Eight to twelve month old females can breed but the first fawning is usually at 23 months of age or later.

It is generally believed that axis does are capable of producing four fawns in three years and are productive to at least age 15. Multiple births are extremely rare but have been reported in zoos and wild populations.

One axis buck can service ten to forty females, maybe more. As the excess and older breeder bucks provide good trophy income, there is no reason to skimp on buck availability.

Red Deer

History

The origin of the red deer can be traced to western China where four different sub-species developed. The French, Persians and Romans practiced deer husbandry as early as the first century B.C., and France and England documented the mushrooming of the red deer population during that time period. Farming red deer for the production of velvet has been popular in China, Russia, and other eastern countries for 2,000 years.

New Zealand revived interest in deer farming about 25 years ago when the wild red deer increased in number until they were considered pests. Since then, New Zealand has been very successful in improving genetics in breeding stock, producing and exporting venison and velvet and promoting hunting.



General

The general color of all sub-species of the European red deer is a rich reddish brown in summer turning to a grayish brown in winter.

The rump patch is a lighter brown and there may be a dark dorsal stripe. Red deer calves are spotted at birth, but these fade away after a few months. Prior to the rut, stags develop a mane as the neck swells.

Red deer hinds weigh about 175 pounds. Red deer tolerate all ranges of weather and have a low susceptibility to disease. They have a high fertility rate and calve easily. They are calm herd animals and easy to transport.

Since red deer are efficient converters of pasture to protein, with proper management they can be raised on marginal land and still yield high quality venison, velvet and by-products.

Nutrition/Health

Although red deer enjoy browsing, they are also grazers and do excellent on native and improved pastures. They prefer legumes like alfalfa and clover, but they thrive on a variety of grasses.

Unlike cattle, red deer can graze on alfalfa with little risk of bloat. In the winter they do well on rye, oats, corn silage and wheat. Red deer are gentle on pasture and can be stocked at a ratio of four to seven deer per acre.

Red deer are disease and stress resistant. However, if they are poorly managed they are subject to the same diseases as traditional livestock such as tuberculosis, Brucellosis, and John's diseases. If stressed, red deer calves are susceptible to yersiniosis. Although red deer are disease resistant, it is extremely important to check the history and health status of the deer before they are bought.

Reproduction

Red deer have seasonal synchronization of birth, body growth, activity cycles and growth stasis corresponding to feed quantity, quality and availability. For example, maximum nutritional demands for females occurs during lactation. The precise timing of breeding and birthing ensures that maximal lactational demands coincide with the most lush and plentiful growth of forage. (May, June and July in the northern hemisphere). Summer is the time of birth and lactation, and the time of maximum weight gain for yearlings. For the mature stags, it is the time for antler growth and regaining of body condition and fat reserves which were depleted during the previous autumn rut and winter.

Red deer are single birth mammals (twins are very rare), giving birth after a gestation of approximately 234 days, beginning in early May through the summer.

Red deer hinds can begin reproducing at 16 months; stags are ready to mate at 24-30 months of age. The rut, or male mating peak, begins in mid-September or early October, depending on the region and climate. Stags can reproduce for 14-20 years with a conception rate close to 90% or better.

The ratio of stags to hinds depends on the age of the stag. Generally a two-year-old stag can breed up to twenty hinds, a three-year-old up to thirty, a four-year-old up to forty, and mature sires can cover as many as fifty or more dams. However, a sire should not be introduced to too many females or his velvet development will suffer.

The Elk Meat & Venison Market

Why elk and venison?

It's no secret that Americans are eating healthier these days. Cardiologists, dietitians, and nutritionists, overwhelmingly recommend a low-fat diet to maintain health and longevity.

Elk and venison is a red meat that looks a lot like beef but is not marbled like other red meats. Therefore, when preparing elk or venison, there is significantly less shrinkage. Because of the lower fat content, a higher percentage of protein and nutrients are present in the meat. The extra protein found in elk and venison tends to satisfy the appetite more quickly. These qualities make elk meat a great value and a fantastic heart-healthy alternative to other red meats.

Nutrition

Lean, flavorful, and just plain healthy, elk meat and venison are lower in fat and cholesterol than other traditional meats. Domestic elk and deer are raised on mostly grass and hay and seasonally supplemented with grain. This in turn creates very lean tissue.



USDA Nutrient Database

100 gram serving

Nutrient	Elk	Beef	Chicken skinless	Chicken with skin	Pork
Protein (g)	22.95	17.32	21.39	18.60	18.95
Total Fat (g)	1.45	24.05	3.08	15.06	14.95
Saturated Fat (g)	0.530	9.750	0.790	4.310	5.280
Cholesterol (mg)	55	74	70	75	67



The Velvet Antler Market

Velvet Antler- There is a strong market for elk and deer velvet antler. Velvet antler is the early stage of the antlers that grows every spring and summer. Velvet is harvested and collected to make medicines that are commonly found in arthritis remedies. Males re-grow antlers every year making this a renewable source.

The Breeding Stock Market

Breeding Stock- There is a high demand for quality breeding stock for elk and deer that have quality genetics. Private sales are common between breeders, however there are also regular select auctions that bring high prices for cervids with proven pedigree.

Artificial Insemination- There is a high demand for quality semen of proven bucks and elk bulls. Semen prices per straw for elk and whitetail deer range from \$100-\$4,000, for quality sires that are proven to pass on strong antler genetics.



The Trophy Stock Market

Trophy Animals- Some elk bulls and bucks are grown and sold to trophy ranches where they may be hunted by hunting clients. Many hunters will spend several days at a "fair-chase" ranch to find a quality elk or buck to hunt. Trophy ranches range in size from several hundred to several thousand acres.



The Antler Art Market

Antler Art- Sheds of antler are often used to make furniture such as coffee tables, end tables and chandeliers.



The Elk & Deer Industry Supports Kansas Jobs and Families!

Did You Know?

- The Kansas elk and deer industry contributes to the nation's \$4 billion dollar cervid industry.
- Domestic elk and deer farming provides the sole income for many Kansas families.
- Most elk and deer farms are family operations. Many of these farms are second and third generation owners.
- Domestic elk and deer can be raised on land that could not otherwise be used for cattle or farmland.
- Elk meat and venison is a fast growing red meat alternative. It is high in protein, low cholesterol, low fat, and sold in many Kansas venues.
- Elk burgers and steaks are commonly sold in local farmer's markets and restaurants.
- Velvet antler is harvested from farmed elk bulls that is used to make medicines to help relieve arthritis and other muscle ailments.
- Farmed elk and deer produce many commodities that are exported bringing out of state dollars to Kansas.
- Farmed deer and elk are routinely vaccinated, wormed, and well fed every day making them the healthiest cervids in the state.
- Kansas has been a home to domestic elk and deer since 1985.
- Farmed deer and elk have been regulated completely by the Kansas Department of Agriculture since 1993.
- There are 8 species breeds of deer raised by ranchers in Kansas.
- The biggest threat to Kansas elk and deer farmers and their businesses is over-regulation and inaccurate information.





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